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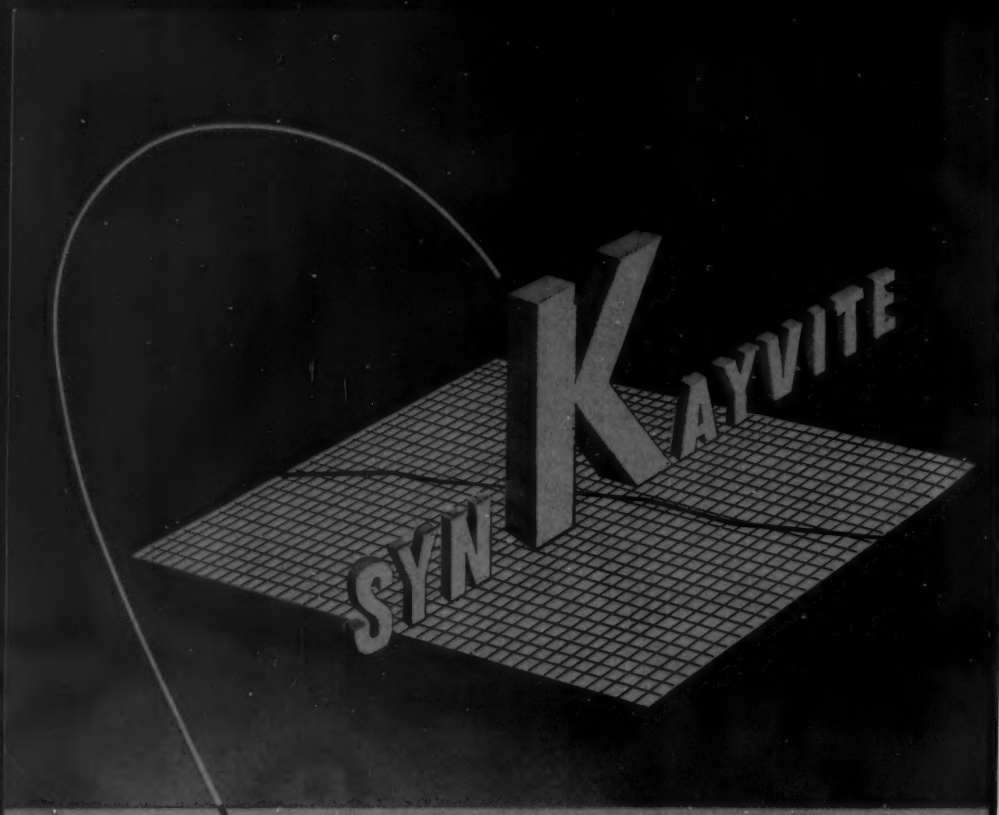

TO MAINTAIN NORMAL PROTHROMBIN LEVELS

The complication of neonatal hemorrhage has been found to be abolished in infants born of mothers who have been given vitamin K during labor. Very significant differences have also been observed between the prothrombin levels of those mothers who had received vitamin K and the levels of the controls. For effective routine prophylaxis with vitamin K many physicians depend exclusively on Synkayvite 'Roche.' Synkayvite is a stable, water-soluble vitamin K-compound—one and one-half times as active as natural vitamin K and of markedly low toxicity. Supplied in oral 5-mg tablets and 1-cc ampuls, 5 mg and 10 mg . . . HOFFMANN-LA ROCHE, INC. • NUTLEY 10, NEW JERSEY

An effective vitamin K-compound

EDITORIALS

New Zealand, Paradise of Socialization

Just as Spain served as a sort of military guinea pig before the onset of World War II, so New Zealand served as a pre-war guinea pig for socialization experiments. So vast were New Zealand's expenditures on social security that she was practically bankrupt, her credit being exhausted and foreign loans unobtainable; wealth was taxed almost out of existence; the forty-hour week had to be replaced with one of fifty-four hours; unemployment before the war was unprecedently great; the people of New Zealand had become the most heavily indebted in the world; there was constant governmental hostility and harassment of industry.

At present, the doctors' paper work, increased ten-fold, prevents proper diagnosis and treatment; the quality of practice has deteriorated; a profusion of certificates for the various benefits is required —thus a patient may leave the office with half a dozen filled in documents, for bureaucratic red tape is unavoidable under such a system; the methods of payment closely parallel those proposed in the Wagner-Murray-Dingell Bill for the United States. Some allowances for these conditions, of course, must be made because of the necessary civilian regimentation under the pressure of war.

This is the Shangri-La to which the politicians seek to lead us by the hand.

Political Medicine

Lawrence Sullivan, in his *Bureaucracy Runs Amuck* (Bobbs-Merrill Company, 1944), describes one possible kind of socialized medicine in the following terms. It might begin, he says, "with the concept of public health service stations managed by the federal government on the chain-store principle, much as gasoline stations now are operated by our great oil companies. The patient would drive in, stand before the laboratory machines, get his readings, and move on, just as he now tests his tire pressures, battery voltages and the antifreeze level in the radiator. Each community would have its federal clinic or medical center, staffed by the Public Health Service, with a table of standard fees and charges framed on the wall. Physicians and surgeons would be employed by the federal government, assigned to the regional clinics in the same manner that Army and Navy officers now are ordered to duty at San Diego, Newport, Key West, Norfolk, or Fort Sam Houston."

This is the sort of nightmare that makes so joyful the hearts of all those medical reformers who have never practiced, social doctrinaires, do-gooders, left-wingers, and the political chiropractors who invented freewheeling finance.

Prestige and Power

A future shortage of physicians, now so frequently discussed by representatives of the medical schools and of the government, may, if realized to the extent sometimes threatened (a drop of one-third in student enrollment), produce some curious results. For example, any extreme shortage would result, as in Germany, in a rise in the activity of the cults. On the other hand, ultimate demobilization of the medical men in the armed services would tend to ease immediate threats to our social system, whether the men concerned returned to private practice or entered service under a socialized system; which brings up the question of what the attitude of demobilized doctors is going to be; will they be predominantly keen to reenter private practice or will some of them have been conditioned for all-out state medicine?

MASSACHUSETTS GENERAL HOSPITAL

Bulfinch Building, where Morton demonstrated ether anesthesia in 1846.

. . . See Cultural Medicine, on page 130

Theoretically, a numerically reduced profession should wield great social power, as did the relatively few women in many of our Colonial communities—among the Hollanders manifesting it by their retention of maiden names after marriage, domestic prestige, opportunity to select the best among many suitors, etc.; among the Nantucketers by community rule in the absence of the men at sea (thus breeding a Lucretia Mott). Perhaps a certain decimation of our ranks, while it may result in temporary damage to the citizenry, will act like the pruning of trees. Something like that may be needed to cure our present plight.

The dire suggestion has been made that greater power on the part of organized medicine to discipline its members—whether granted by the state or asserted by medical societies which have grown in power and prestige, perhaps because of the very decimation alluded to in the foregoing paragraph—might result in the further driving out or voluntary secession of many delinquents. If this were ever to happen it would mean the existence of a large body of dubious, quasi-professional doctors between the cults, quacks and charlatans, and the profession proper. This could mean a separation of the kickbackers, feesplitters, commission hounds, and worse, from organized medicine. But at this point some will say that organized medicine would then have become an aristocracy, or even a priesthood. Nevertheless our present job is to attempt a housecleaning regardless of the consequences. That job should begin at the beginning, a screening process whereby candidates who reflect the low moral tone of the present social order—and this has little or nothing to do with academic fitness, which disguises so many frauds—shall not gain entrance into the profession.

When even efforts to legally define therapeutic abortion, for the guidance of disciplinary bodies, meet with resistance in high quarters it is time to take a realistic view of things.

Meanwhile, our diminishing ranks are developing a wizardry, as in the application of the sulfa drugs, new blood uses, and penicillin, wherewith we shall be able to cope, Merlin-like, with large clienteles.

Perhaps we need not worry about our future prestige and power—or our future ability to drive the money-changers out of the temple.

War and Medicine

Colonel Edgar Erskine Hume, of the Medical Corps of the Army of the United States, in his *March of Medicine* (Columbia University Press, 1944), points out that warfare involves medical as well as military objectives, out of which fact grow the advances that, paradoxically, accompany the destruction and death of war. The enemy in the medical case is an invisible one, now no longer so deadly as of yore.

Indeed, Colonel Hume suggests that the first hospitals were created by war.

Certainly the Crimean War initiated military nursing in something like the modern sense.

State care of war veterans owes its origin to Louis XIV.

The Crusaders brought back with them the medicine of the East.

Greek culture, including its medicine, was spread throughout the ancient world by Alexander the Great.

Roman medicine went with the legions to Germanic barbarians.

Persian medicine flourished as never before after the Arabian conquest.

The French school of medicine was born in the throes of the Revolution; at least French medicine was "reorganized" as a result of it.

"The Franco-Prussian War served to liberate France from the decadence of the Second Empire and to establish the Third Republic, in which medicine reached great heights. The revolutions which brought about modern Italy, Germany and the Soviet Union must also be mentioned in this regard."

Out of the present war will come a healing of the nations without precedent.

Wartime Health

The health of the country under wartime conditions has been surprisingly good. For various reasons the death rate is running low. Any increase in rate among the old is explainable by the rise in the average age of the population.

Tuberculosis is no longer formidable, except in certain areas. The mortality of pneumonia (other than the virus type), puerperal infections, meningitis, appendicitis, and streptococcus infections has been greatly reduced by the sulfa drugs. Fatal

—Concluded on page 129

BRITAIN'S NEW GREAT CHARTER OF HEALTH

SIR ARTHUR S. MacNALTY, K.C.B.

Formerly Chief Medical Officer of Health for England and Wales; editor-in-chief of Britain's Official Medical History of the War

THE eagerly expected White Paper on a National Health Service for Britain was presented to Parliament by the Minister of Health and the Secretary of State for Scotland in February this year. In considering the form which the new service should take, the Government have had the help of informal discussions with representatives of the major local authorities, the medical profession, the voluntary hospitals and others. They now put forward definite proposals, not as fixed decisions but for discussion in Parliament and in the country. Constructive criticism is welcomed, and after all concerned have expressed their views the Government will introduce legislation which they hope will be largely accepted. It is a method which embodies the true spirit of democracy in Britain.

When the time came for the Ministry of Health to formulate its new proposals, the nuclei of a comprehensive Health Service were already present in the existing official and voluntary services. The task was to weld this scattered provision into one harmonious whole. This is the keynote of the White Paper.

The new Service will provide for everyone all the free medical advice, treatment and care they may require. It represents the natural next development in the long and continuous growth of the health services of the country. "Although it forms part of the wider theme of post-war reconstruction—and although it will form an essential part of any scheme of social insurance which may be adopted—it has to be seen in the light of the past as well as the future, and to be judged on its own merits as part of a steady historical process of improving health and the opportunity for health among the people."

Personal health still tends to be regarded as something to be treated when at fault or perhaps to be preserved from getting at fault. A comprehensive health service will help to emphasize it as something to be positively improved and promoted.

IT IS proposed to set up an organization in which both central and local authority will participate, central responsibility lying with the Minister of Health and the Secretary of State for Scotland, and local authority with the major local government authorities (County and County Borough Councils) operating for some purposes, severally over their existing areas, and for other purposes jointly over larger areas formed by combination.

At the side of the Ministers, but independent of them, there will be a professional statutory body, the Central Health Services Council. Its function will be to express the expert view on any general technical aspect of the Service. It will advise on matters and general regulations referred to it by the Minister, and on any other matters within its province. This Council will consist of thirty to forty members representing the main medical organizations, voluntary and municipal hospitals, medical teaching and professions like dentistry and nursing. There will also be set up a Central Medical Board to perform executive functions in the general practitioner service. This will be composed, in the main, of members of the medical profession and will be the "employer" body with which the general practitioner enters into contract in the new Service.

Larger area authorities will be created by combining the existing county and county borough authorities in joint boards to be settled by the Minister after consultation with local authorities. In some exceptional cases, of which the County of London is the most obvious, no combination will be necessary. The new Service includes hospital and institutional services for the sick in general, for mental cases, for maternity, and for every general and special hospital subject. Infectious diseases hospitals will in future form part of the general hospital system.

The new joint authority will examine the general health needs of the area, but normally the provision and maintenance

of local clinics will rest with the individual councils. Some forms of local clinic service, like tuberculosis dispensaries, mental clinics and cancer diagnostic centers are, in essence, out-patient activities of the hospital and consultant services, and these should usually be the responsibility of the same authority which deals with these services over a larger area. A local Health Services Council will advise the local authority or joint board on technical matters. Provided that all the professional interests are fairly represented, this advisory body need not be of a uniform pattern throughout the country.

The term "hospital services" includes all forms of institutional care of every kind of sickness or injury. It includes also outpatient treatment and treatment at sanatoria and rehabilitation centers. Two main problems are dealt with in the new service: (1) the bringing together in suitable areas of the activities of the various separate and independent hospitals and (2) the combination of two quite different hospital systems (voluntary and municipal) in a single service. The whole Service must be brought under one ultimate public responsibility without destroying the independence and the traditions of the voluntary hospitals. The voluntary hospitals must still look substantially to their previous financial resources. Those who enter into the new Service will receive payment for service rendered from the joint authority. In addition, both the municipal and voluntary hospitals will receive a direct grant from public funds.

One of the duties of the joint authority will be to provide an adequate consultant service based on the hospitals and available to all general practitioners working under the plan. The Government await the report of Sir William Goodenough's Committee on medical schools before proposing in detail a form of consultant service. There is need for more consultants and a better distribution of them. Remuneration may be on a whole-time or part-time basis.

IN order to provide a comprehensive general practitioner service, which is the "Front Line" of the new Service, the State now proposes to take a greater part in future in regard to medical practice.

(1) Central negotiation of major terms and conditions will remain. Insurance committees will be abolished and doctors will be in contractural relation with the Central Medical Board and be remunerated by it.

(2) Other functions of insurance committees will also fall to the Board, but, to avoid over-centralization, minor functions will be discharged through a local committee on which there will be members of the local authority.

(3) The new joint authority will provide for the linking of general practitioners with hospital and consultant and other services in the area.

(4) County and county borough councils will normally provide premises, such as health centers, which are approved in the area plan.

(5) The doctor in his contract with the Board will be required to observe the arrangements of the area plan. The personal doctor-patient relationship and free choice of doctor is to be preserved, the whole Service being based on the "family doctor" for every man, woman or child. General practitioners will work from their own surgeries as at present, separately or in groups as teams of workers, or from the specially provided and equipped new health centers. All necessary drugs and medicines will be provided. Doctors may still engage in private practice subject to their contractual obligations under the plan, or they may remain independent.

Other features of the new Service are a full dental and ophthalmic service and a home nursing service. The School Medical Service will be linked up with the maternity and child welfare clinics in a manner to be decided under the new Education Bill. The cost of the health plan would be met out of taxation, rates and the new social insurance contribution which is yet to be developed. The estimated cost is $592,000,000 per annum.

SUCH are the outlines of these far-reaching proposals based on the principle of liberty of individual choice. There is neither compulsion for patient nor doctor. The people are free to make use of or not to use these facilities. The doctor is still free to pursue his profession in his own individual way.

The scheme is now open to discussion. It will probably receive much criticism and may be modified in certain of its details. Granting all this, it emerges as a great conception, broad in view and full of wisdom and vision. Rightly used, it

may become the Great Charter of Health in Britain. More remarkable still, it has been planned in the fifth year of a war in which the national existence is at stake.

PERINEAL PRURITUS AND TRICHOMONAS VAGINALIS

CHARLES J. DRUECK, M.D., F.A.C.S.
Chicago, Illinois

TRICHOMONAS vaginalis is one of the causes of perineal pruritus which may escape consideration because its clinical history is so vague, its subjective symptoms so inconclusive, its objective findings so varied, and the woman's ability to locate the itching so innaccurate.

Etiology

The exact origin of the contamination is often unknown.[1] Karnaky[2] believes that *Trichomonas buccalis* and *Trichomonas intestinalis* are changed to *Trichomonas vaginalis* when transplanted to the vagina, but Bland and Rakoff,[3] and Kessel and Gafford[4] were unable to support this view, though two apparent cases of *Trichomonas vaginalis* proctitis were reported by Peterson, and Zener.[5] The lower urinary tract is considered to be one source of recurrence and the male can infrequently be the cause of infection or reinfection.[6] The glands of Skene and Bartholin may also harbor the parasites and be foci for recurrence.[7]

Several protozoan parasites may cause vaginitis and though *Trichomonas vaginalis* can produce abnormal discharge and vaginal irritation these flagellates when present may or may not be the basic pathologic factor. Trussell and Plass[8] and Moench[9] believe that the organism is only an accidental inhabitant of the vagina which in itself produces no symptoms and disappears spontaneously under certain conditions. Hibbert & Falls[10] say that the *Streptococcus subacidus* plays an important role in the production of the vaginitis. Hees[11] says that the trichomonas are capable of producing epidemics and vaginitis, able of producing epidemics of vaginitis, trichomoniasis increasing puerperal morbidity. Bland *et al.*[12] feel that *Trichomonas vaginalis* does increase puerperal morbidity.

Mintz[13] agrees with this view. According to Hees *Trichomonas vaginalis* has been found by culture and smear in the endometrium, chonically inflamed tubes, ovarian cysts, the peritoneum, the blood stream of patients and the visera of the fetus; and in pelvic abscesses caused by the flagellate. However, such complications must be exceptional because standard textbooks do not mention such possible grave complications.

Symptoms

Many women harbor trichomonas without complaining while others are disturbed by a profuse leukorrhea and a distressing pruritus vulvae. The discharge is usually foamy, saliva-like, thin, and whitish in color, but may be thick, yellow and foul smelling. In the acute stages the vagina appears extremely reddened and at times the vulva may be involved. The cervix shows varying degrees of cervicitis. In the chronic stages, the vulva and vagina may appear entirely normal. The vaginal walls, however, may show the "flea-bitten" appearance of minute hemorrhages which has been termed the "strawberry vagina." Subjectively there is a general, diffuse hyperemia with burning and irritation of the whole upper vagina and cervix; also itching and irritation of the vulva and perineum, and chafing of the thighs. The vagina may become quite tender.

Examination of the Patient

With the patient in the lithotomy position, a dry, unlubricated speculum is inserted into the vagina. Lubricants of glycerin, oil or jelly dehydrate the organisms, render them immobile, and thus make the diagnosis uncertain. A cotton applicator is used to secure a small amount of the secretion from the deeper part of the vagina. The applicator is then inserted into a test tube containing 5 cc. of normal

saline and the tube well shaken. A drop of this under the high power lens shows the moving flagellated trichomonas. The patient is examined further to determine possible foci of infection in the bladder, cervix, Skene's and Bartholin's glands, and the rectum, as well as the vagina.

The possibility of mistaking this organism for human spermatozoa, or vice versa, should be borne in mind. Some forms of trichomonas have been found in the intestine (Delafield & Prudden[14]).

Treatment

Opinion is practically unanimous that there is no specific or ideal therapy, that some patients are more recalcitrant than others and that treatment should be continued through the period of menstruation. Whatever method is used Davis[15] estimates about 20 per cent of failures as judged by the criterion of permanent absence of flagellates from the vaginal secretion, and Curtis[16] estimates that 85 per cent of patients ultimately obtain clinical cure or relief irrespective of the treatment employed. Many factors besides the flagellate organism must be taken into consideration. Among these are secondary infection of the vagina with other organisms, the condition of the cervix and the vestibular glands, the metabolic status of the pelvic organs and the patient, and the mental reactions of patients to the pelvic infection. All of these are as important as the cooperation of the physician and patient.

Technic of Procedure

The evening before coming for treatment the woman takes a vaginal douche of one quart of warm soapsuds followed by a pint of plain water to rinse out all of the soap.

At the office, the vagina is scrubbed thoroughly with green soap and water, then dried with a cotton swab and well dusted with 1 per cent silver picrate in kaolin. A special insufflator is necessary to assure ballooning out of the vaginal walls so that the powder may spread over every particle of the mucosa. The powder is left in place until the second evening when the woman takes an alkaline douche (sodium bicarbonate, 1 soupspoonful in a quart of water). The picrate powder is then dusted on again the next morning. This treatment is repeated every other day for two weeks when a smear is again taken. If no trichomonas are found the patient is given suppositories containing 2 grains of silver picrate in boroglyceride gelatin and instructed to insert one suppository high in the vagina each night. The suppositories are continued daily until the next menstruation after which another smear is taken. If no trichomonas are found, treatment is discontinued but the patient is re-examined each month, after her menstruation, for six to nine periods.

As the condition improves, the pus cells become fewer in number until finally none are found; the cellular debris disappears and is replaced by the normal epithelial cells; large numbers of Doederlein bacilli replace the gram-positive cocci, *B. coli*, diphtheroids and other organisms found previously, thus showing the re-establishment of the normal vaginal bacterial flora. Because the trichomonas invade the rectum, this organ should receive attention at the same time the vagina is being treated. Each night the patient takes a one pint enema of soapsuds and follows it with a rinse of one pint of plain tap water, after which she inserts into the rectum a suppository similar to the ones used in the vagina. She is instructed to use different nozzles for the vagina and rectum and to keep each in a separate container in lysol solution.

If the patient is married, her husband should be interrogated for a urethral discharge and painful urination. A fresh condom specimen should be examined for trichomonas immediately after copulation. The prostate should also be massaged and its secretions examined. If the husband is found to be infected, he should, of course, be treated to prevent him from reinfecting his wife.

A suppository containing 2 grains of carbarsone in a glycerogelatin base has been used in the rectum instead of the silver picrate, and 5 grains of carbarsone in an equal amount of sodium bicarbonate instilled into the vagina instead of the picrate powder. Its use has been very successful. Patients must be watched for symptoms of carbarsone poisoning (optic and retinal changes) if the latter drug is used.

Neither the silver picrate nor the carbarsone should be long continued because of systemic intoxication. After three to six courses of treatment, we follow with hypertonic solution of sodium chloride as

suggested by Dozortseva & Lifshits" consisting of a daily vaginal douche of one quart of 25 per cent solution of sodium chloride (one ordinary tumblerful of salt to a quart of water) at a temperature of 100° F. This is continued daily for two to three weeks.

In the acute stage of trichomonas vaginitis, the silver pictrate is sometimes very irritating to the patient. In such cases it may be well to use the jelly advised by Greenhill[18], and with the subsidence of the acute stage, the silver picrate therapy may be substituted.

Smith[19] reports good results with the use of sodium perborate. The vaginal secretions are tested with litmus paper. The reaction of the vaginal secretions should be mildly acid before beginning treatment. If the reaction is alkaline, it is best to give a douche of lactic acid solution (U.S.P., one dram to one quart of water) before inserting the capsule of sodium perborate.

1. The vagina is gently swabbed with cotton pledgets to remove secretions; this step being omitted if it is too painful.

2. One capsule (#12 veterinary), containing 1 gram of sodium perborate, is inserted deep into the posterior vaginal fornix. The capsule may be lubricated with water and inserted by the patient early each morning.

3. A vaginal douche of sodium perborate solution (15 grams of sodium perborate to one quart of lukewarm water) is taken at bedtime, slowly, in the reclining position.

4. This procedure is followed each day for 10 days after the first negative vaginal smear is obtained. The entire course of treatment usually covers 12 to 15 days.

5. Vaginal smears are examined immediately after the next three menstrual periods.

6. The special instructions given the patient are:

a. Intercourse is forbidden during the treatment.
b. Activities are restricted during the treatment.
c. Shower baths are preferred to tub baths.
d. All drugs and douches, except as prescribed, are forbidden.
e. Douche apparatus and bath towels must be sterilized each time before using.
f. Toilet seats are to be scrubbed with soap and water each day.
g. After a bowel movement, cleansing should be in a backward direction and away from the vagina.
h. Careful cleansing of the hands is essential to prevent mouth to vagina infection.

Sodium perborate, which is a powerful oxidizing agent, reacts with lactic acid of the vaginal secretion to form sodium lactate, boric acid and hydrogen peroxide. The chalky appearance of the subsequent vaginal discharge is due to the precipitation of sodium lactate and boric acid. In a very severe case, the patient may complain of burning due to the sodium perborate solution being too strong. Almost immediate relief may be obtained by using a douche of plain water or of sodium bicarbonate solution. In all cases, patients should be told the proper after-care following a bowel evacuation, care being taken not to spread the fecal material toward the vagina.

Toxicity of Materials Used in Treatment

Local and systemic reaction is to be anticipated in all cases. Zener warned that silver picrate is dangerous in an alkaline medium. Chemical burns in the vagina following the use of sodium perborate capsules were reported by Smith.[19] Campbell[20] reported a drug rash following the vaginal application of tablets of stovarsol.

Résumé

Whatever method is used the best results are obtained only when treatment is persistently carried out, as omission of small details, such as thoroughly cleansing the vagina and removing the cervical plug of mucus, may at times account for failure. It is significant that good results may be obtained by the use of many substances and by variations in the methods of their use, and that a small percentage of failures persists in spite of careful treatment. Hesseltine[21] said these recalcitrant patients probably need more than local treatment.

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EDITORIALS

—*Concluded from page 123*

accidents in industry and on the public highways have been cut down. Infant and child health has been enhanced and the toll of the infectious diseases of early life much reduced. About two-thirds of our counties now have well-trained health officers.

There has been a marked gain along nutritional lines, for which better food distribution deserves some credit. Education in this field is accomplishing large results.

Postwar America promises a new era in public health, for in addition to the advances outlined there will be improved venereal disease control, virtual eradication of tuberculosis, the application in civil life of wartime surgical developments, and the conquest of many diseases by penicillin and other agents akin to it.

There are to be some flies in the ointment, of course; malaria and certain tropical infections will challenge our energies and talents.

On the whole, barring some unexpected epidemic like the influenza at the close of the last war, we are justified in looking forward to a new and splendid era in public health and in feeling proud of present conditions.

A Transportation Paradox

At varying intervals there are recurrent bursts of indignation and resentment on the part of subway riders. The overcrowding during rush hours, with resulting stampedes, crushing, and occasional savagery, outrages the long-suffering public's patience and sense of decency and many letters are written to the newspapers. There is also, on the part of the more intelligent, a keener realization at such times of emotional reaction that the health risks are somewhat appalling.

Some years ago, we made an inquiry into governmental regulations pertaining to the conditions under which *cattle* might be transported. The regulations are very strict and explicit as to space, both as regards elbow room, so to speak, and cubic area of cars. Everything is humanely laid down with respect to dimensional requirements. In other words, parties shipping cattle in violation of such regulations can be and are prosecuted and punished. Cattle can not be shipped under anything like the conditions that prevail in subways.

By what curious administrative legerdemain are people dealt with on a lower level than cattle?

Why could not regulations be framed and enforced that would give the traveling public "equal rights" with cattle?

This could become a realistic issue. The press could feature the cattle regulations in connection with the five cent fare issue and the proposed transportation tax. Of course, the place above all where such cattle regulations ought to be displayed is *in the subways themselves.* This would be educational with an ironical vengeance.

THE MASSACHUSETTS GENERAL HOSPITAL

JUDGED by the character of the service it has performed for over a hundred years — and is still performing — the Massachusetts General Hospital is famous indeed. To be exact, the original Bulfinch unit was opened in 1821, since which time this hospital has boasted a long line of masterful doctors—the Warrens, Jacksons, Bigelows, Shattucks and Cabots, while the saga of the place was carried into our own day by Harvey Cushing, great neurosurgeon.

Together with the affiliation of hospital, medical school and university, a remarkable note of early progressiveness was the direct relationship of this combination to medical journalism, in the shape, first, of the *New England Journal of Medicine and Surgery* and later of the *Boston Medical and Surgical Journal.*

The introduction of ether, the Civil War, the advent of antisepsis and the development of surgical pathology combined to make surgery the predominant activity in the Massachusetts General Hospital, although it had a prominent place from the beginning. Therefore, outstanding items in its history have been the famous demonstration of ether anesthesia, the introduction of litholapaxy and hip-joint excision by Bigelow, and the work of Fitz on appendicitis.

THE operating room in the dome of the Bulfinch building was the scene, on October 16, 1846, of the demonstration of ether anesthesia which will be described by medical historians until the end of time. The memorial tablet in the dome sets forth that "Sulphuric ether was administered by William Thomas Green Morton, a Boston dentist. The patient was Gilbert Abbott. The operation was the removal of a tumor under the jaw. The surgeon was John Collins Warren. The patient declared that he had felt no pain during the operation and was discharged well December 7."

The great event was reported by Dr. Henry J. Bigelow in a paper read before the American Academy of Arts and Sciences on November 3, 1846. This paper was published in the *Boston Medical and Surgical Journal* of November 18, 1846.

There have been many commemorative observations of Ether Day at the Massachusetts General Hospital, usually marked by notable addresses delivered by famous American medical leaders.

The centennial of the opening of the Massachusetts General Hospital was observed on Ether Day, 1921.

Busts of Morton and Warren are in the Bulfinch Building, the dome of which is now an ether museum, where may be seen such objects as the apparatus Morton used and the sponges that were for so long employed for the induction of anesthesia.

ETHER anesthesia, in the words of Sir Joseph Lister, was a priceless blessing to mankind from America.

And so "The very ground upon which stands the Massachusetts General Hospital is sacred to us all" (Dr. W. W. Dawson).

Note—To make up the wreath which encircles our picture (page 122) of the Massachusetts General Hospital (Bulfinch Building) the artist has chosen the following medicinal plants: *Atropa belladonna, Cinchona calisaya, Hydrastis canadensis, Sanguinaria canadensis, Chaviceps purpurea Gelsemium sempervirens, Digitalis purpurea, Aconitum napellus, Convallaria majalis, Papaver somniferum,* and *Strychnos nux-vomica.* Such "leaves of the tree of healing" fitly symbolize a part of the therapy of a great hospital.

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From the Editorial Research Department of the MEDICAL TIMES.

CANCER

Edited by John Mumford Swan, M.D. (Pennsylvania), F.A.C.P. Executive Secretary of the New York State Committee of the American Society for the Control of Cancer, Inc., assisted by Charles William Hennington, B.S. (Rochester), M.D. (Hopkins), F.A.C.S.

CANCER OF THE BREAST
V SURVIVALS

In making an estimate of the results of the treatment of cancer there are several elements to be taken into consideration.

1. The delay on the part of the patient in his or her attempt to establish a diagnosis and consequently his or her condition when first seen.
2. Delay on the part of the physician in his estimate of the significance of the symptoms complained of by the patient.
3. The presence or absence of metastases when the patient is first seen.
4. The question of operability if surgery is to be employed in the attempt to destroy the lesion.
5. The influence of the basis upon which the end results are estimated: that is, whether all patients treated, irrespective of the extent of the disease, are included in the estimate or whether only those patients considered "operable" are counted in the estimate.

At the present time the majority of observers consider a five year survival, without clinical evidence of recurrence, sufficient to claim that THAT cancer is cured. Still there are occasional instances in which late local recurrence is seen, later than five years, and in fact an occasional case in which the patient dies of cancer after a lapse of ten years.

The development of cancer after the five or the ten year survival period has been passed should be investigated from the viewpoint of the question whether the cancer is indeed a recurrence of the original growth or of a previously inactive metastasis, on the one hand, or on the other hand, whether it is not a second, entirely new cancer. The Monroe County Committee of the American Society for the Control of Cancer has been collecting and recording the five year survivals of patients treated in the local hospitals, based on the total number receiving treatment, whether they were early cases or late cases and without consideration of the form of treatment employed. Only those cases have been included in this study in which the histological material has been reviewed by a committee of three pathologists, all of whom have agreed that the growth was cancer.

These reports, started in 1930, have been published in this journal periodically since that date. The five year survivals at the end of 1943 numbered 673, 179 of whom were then ten year survivals.

Table I and Table II will set forth the published material from other sources.

It will be noted that some of the authors report the total number of patients treated and the number of those living at the end of five years. Other authors report the percentages only. In tabulating the reported results in those cases in which the total number and percentages only are given the total number of survivals has been figured from the reported percentages.

The report by Ill (9) covers patients treated over a period of thirty-two years. Two of his patients survived without recurrence for more than twenty years.

In the series of 217 cases reported by Lee in 1933 (13) primary operable cases were followed. The patients had been under observation in Memorial Hospital (New York, N. Y.) and had been treated with pre-operative irradiation followed by radical mastectomy and that in turn followed by postoperative irradiation. At the end of five years eighty-eight patients (40.55 percent) were alive and well; thirteen (5.99 percent) were living with recurrence; 109 were dead of cancer (50.23 percent). At the end of ten years sixteen patients were alive and well (7.37

percent); one was living with recurrence and fifty-five had died of cancer (25.3 percent). Only seventy-two cases were followed for ten years (33.2 percent).

In the same year Kaplan and Rosh (10) reported ten patients living and without recurrence of a series of sixty cases treated in 1924 and 1925 (eight and nine years previously) (16.66 per cent).

Mathews (15) reports a series of 115 patients treated between the years 1913 and 1923; 108 of whom had radical mastectomies and seven of whom had simple mastectomies. Twenty-eight of these patients survived for from ten to twenty years (24.3 percent). He is of the opinion that about 40.0 percent of the patients treated with surgery may be expected to live for five years and 25.0 percent for ten years. The deaths after the

TABLE I

FIVE YEAR SURVIVALS

Author		Total Cases	Five Year	Percent
(1) Ill	1932	266	47	17.55
(2) Lee	1933	217	88	40.55
(1) Kaplan and Rosh	1933	60	(3) 10	16.66
*(1) Pettit	1935	41	24	58.0
*(1) Sophian	1935	124	26	20.9
(1) Portmann	1936	(5) 85	33	38.4
		(6) 99	50	50.8
(1) Nicholson and Berman	1936	261	29	11.1
*(1) Creyssel and Morel	1936	173	27	15.6
*(1) Keynes	1937	(7) 75	53	71.4
		(8) 66	19	29.3
		(9) 40	14	23.6
*(1) Grace	1937	(10) 40	16	44.1
		(11) 1276	612	48.0
*(1) Harrington	1940	4547	2034	44.7
(1) Pfahler and Vastine	1938	491		(12) 39.7
				(13) 23.3
				(14) 5.1
(1) Lewis and Geschickter	1938	(15) 47	26	55.3
		(16) 23	6	26.0
		(17) 39	8	20.5
(2) Kunath	1940	90	43	47.77
*(1) Cohn	1942	(5) 51	18	35.0
		(18) 34	25	57.0
		(6) 20	8	42.0
(2) Haagensten and Stout	1942	(5) 640	231	36.1
*(2) Adair	1943	(7) 95	73	76.8
		(8) 177	74	41.8
		8,106	3596	39.40%

(1) Based on total cases seen.
(2) Based on operable cases.
(3) Cases Treated eight and nine years before.
(4) From six to sixteen years.
(5) Cases treated with surgery alone.
(6) Cases treated with surgery and potoperative irradiation.
(7) Disease confined to the breast.
(8) Disease confined to the breast and the axilla.
(9) Disease advanced or inoperable.
(10) Treated with simple mastectomy and post-operative irradiation.
(11) Treated with radical mastectomy and post-operative irradiation.
(12) Patients with local recurrence treated with irradiation.
(13) Patients with axillary or supraclavicular recurrence.
(14) Patients with distant metastases.
(15) Cases of comedo cancer.
(16) Cases of duct carcinoma.
(17) Cases of comedo and scirrhous carcinoma.
(18) Cases in which preoperative irradiation and radical mastectomy were employed.
* Total number figured from percentages.

TABLE II

TEN YEAR SURVIVALS

Author		Total Cases	Ten Year	Percent
(2) Lee	1933	217	16	7.87
*(1) Mathews	1933	115	28	24.3
(1) Carter	1934	120	(4) 19	15.83
(1) Sophian	1935	124	18	14.5
*(1) Stanton	1935	54	13	24.0
*(1) Harrington	1937	(7) 1676	901	53.8
		(8) 2952	460	15.6
(1) Gordon-Taylor	1938	(5) 363	158	43.5
(1) Kunath	1940	90	2	2.2
		5711	1615	28.2

fifth year of survival are mainly due to carcinoma and "to a very small extent" to intercurrent disease. However, he is of the opinion that if a patient survives five years after surgery her expectation of life for five years longer is 62.5 percent. If the axillary lymphnodes are not involved the expectation is even greater. Furthermore, he is of the opinion that, contrary to common belief, the younger patients do quite as well following radical mastectomy as the patients of average age.

In 1934, Carter (3) reported the results of treatment of cancer of the breast in 120 unselected cases at The Bigelow Clinic (Brandon, Manitoba.) The patients were given pre-operative irradiation, radical surgery and postoperative irradiation. In analyzing the results he excluded thirty cases because the patients failed to complete the postoperative irradiation treatments and twenty-four because the five year period had not been passed. Of the remaining sixty-six cases, nine were lost. Nineteen were living without recurrence for from six to sixteen years; 28.78 percent of the sixty-six cases or 15.83 percent of the entire 120 cases. Seven of the patients died of late recurrence, that is, after the five year period had been passed (10.6 percent of the sixty-six cases.)

In 1935, of a series of 124 cases Sophian (22) reported twenty-six patients (20.9 percent) who survived five or more years. Eight patients died of other causes in from six to fourteen years after surgery. Eighteen were alive and well at the end of ten years (14.5 percent). In cases with axillary metastasis there were 7.0 percent of ten year survivals. He found that the length of the life of patients following radical surgery was greatest in tumors of grade I (Broders) and least in those of grade III.

Stanton (23) reports fifty-four cases of cancer of the breast treated with surgery between July, 1907 and January, 1926. Thirteen of the patients were living from seven years and ten months to twenty years and six months (24.0 percent). No patient in this series was treated with pre-operative irradiation and only one "received any considerable amount of postoperative irradiation."

Pettit (19), also in 1935, reported 58.0 percent of 41 cases (24) as five year survivals without recurrence.

In 1936 Portmann (21) reported the results of treatment of eighty-five patients treated with surgery alone and ninety-nine patients treated with surgery and postoperative irradiation. Of the former 61.6 percent were known to have died of cancer within five years while 49.4 percent of the latter group were known to have died within the same period.

Nicholson and Berman (18) report a follow up record of 261 cases of carcinoma of the breast admitted to the Steiner Clinic (Atlanta) between September, 1924 and July, 1930 (five years and ten months). The cases were of all types; early, moderately advanced and hopeless. Twenty-nine of the patients (11.1 percent) were living and well at the end of five years. The authors are of the opinion that percentages of five year survivals should be based on all patients seen in the clinic. It is true that the "early cases" stand a better chance for five year survival than the moderately advanced cases or than the hopeless cases.

Creyssel and Morel (5) report 15.6 percent of the 173 patients treated in the Anticancer Center of Lyons (France) as five year survivals. The percentage was calculated on the basis of all cases seen, whether they were early or late.

Nathanson and Welch (17) after a study of the survival period of 1565 patients admitted to the Collis P. Huntington Memorial Hospital (Boston) and the Pondville (Mass.) State Hospital, found that the average length of life from the onset of symptoms in patients who were treated between 1912 and 1932 was 3.5 years. On the other hand, in untreated patients the average length of survival was 2.5 years.

Keynes, (11) up to the end of March, 1937, had 250 cases of cancer of the breast available for study after five year end results following conservative treatment. (See the section on Treatment—irradiation, for the details of Keynes' method). Of seventy-five patients in whom the disease was confined to the breast there were 71.4 percent of five year survivals. Of sixty-six patients in whom the disease was confined to the breast and the axilla there were 29.3 percent five year survivals. Of sixty patients in whom the disease was advanced or inoperable there were 23.6 percent five year survivals.

Grace (6) compared the five year end results in forty cases of cancer of the

breast treated with simple mastectomy and postoperative irradiation, and 1276 cases treated with radical mastectomy and postoperative irradiation in the Kings County Hospital and St. Mary's Hospital (Brooklyn, N. Y.) Of the forty patients in the former group 44.1 percent were living at the end of five years and 48.0 percent of the latter group of 1276 patients survived the five year period.

During the past ten years, Harrington (8) from the Mayo Clinic has made four reports of survivals of patients with breast cancer. His first report published in 1933 (8a) showed 25 percent five year survivals of 2879 patients, or 720 cases. The ten year survivals were 13.7 percent or 394. In 1935, (8b) he reported a follow-up of 3381 cases with 1339 five year survivals, or 39.6 percent. In 1937, (8c) his report took into consideration 4628 cases that were treated with surgery and post-operative irradiation between 1910 and 1933. Of these cases 4506 were traced. The five year survivals were 43.6 percent or 1965 cases; the ten year survivals 28.9 percent, or 1302; the fifteen year survivals 21.5 percent or 969; and the twenty year survivals 16.6 percent or 748 cases.

In 1940 (8d) in an extensive analysis from many angles, of the result of radical mastectomy for breast cancer, his report was based on 5026 cases. Of these patients 4547 were traced and of these 2034 had lived five or more years, or 44.7 percent; 3436 patients who had been treated ten or more years before were traced and of these 1008 had lived ten or more years, or 29.3 percent; 2285 who had been treated fifteen or more years before were traced and of these 496 had survived the fifteen year period, or 21.7 percent; 1220 patients who had been treated 20 years or more before were traced and 206 were living, or 16.9 percent.

Between 1908 and 1938, inclusive, Gordon-Taylor (24) treated 603 cases of cancer of the breast with radical mastectomy. Of these 363 were under his care long enough to have survived for ten years or longer. One hundred and fifty eight did survive that period (43.5 percent). However, when the results are studied from the viewpoint of the classifications "which are by common usage" designated Group I, Group II and Group III the percentages are 84.07, 29.4, and 6.5 respectively. Of 497 patients who could have survived five years 85.88 percent with Grade I, 39.9 percent with Grade II and 9.8 percent with Grade III tumors did so survive.

Pfahler and Vastine (20) report the results of postoperative irradiation in 491 patients with recurrence. Of those with local recurrence, 39.7 percent, of those with axillary or supraclavicular recurrence, 23.3 percent, and of those with distant metastases 5.1 percent were well five years after treatment.

In 47 cases of comedo carcinoma of the breast Lewis and Geschickter (14) report twenty-six of the patients living without recurrence five years or more after treatment (55.3 percent).

In twenty-three cases of duct carcinoma six were living and well after five years (26.0 percent).

In thirty-nine cases of combined comedo and scirrhous carcinoma eight were living without recurrence for five or more years (20.51 percent).

Of ninety operable cases reported by Kunath (12) forty-three of the patients survived for five years (47.77 percent) and two for ten years (2.2 percent).

Brooks and Daniel (2) report the following five year survivals: In cases in which there was no demonstrable cancer outside the mammary gland at operation or on subsequent gross and histologic study of the removed tissues, 91.6 percent.

In cases in which no extension of the growth was observed during operation, but in which cancer was later demonstrated in the inferior axillary lymph-nodes by microscopic study, 34.5 percent.

In cases in which carcinomatous lymph-nodes were seen in the axilla or near the chest wall at the time of operation, 16.1 percent.

In 1942 Cohn (4) reported 42 five year survivals of 94 cases of carcinoma of the breast treated with radical mastectomy (44.6). Of these patients 51 were treated with surgery alone with 35 percent five year survivals. In the other 43 the treatment consisted of pre-operative irradiation followed by radical mastectomy and the five year survivals were 57 percent. In 20 other cases treated with pre-operative irradiation excision of the tumor or simple mastectomy and postoperative irradiation there were 42 percent five year survivals.

Haagensen and Stout (7) analyzed 1040 cases of carcinoma of the breast seen at the Presbyterian Hospital (New York, N. Y.) over a twenty year period (1915 to

1934 inclusive). The authors have stressed the importance of calculating operable and five year cures on the basis of the total number of patients seen, with no deduction for those lost, those in whom treatment was not completed, etc. "Only in this way can strictly comparable statistics from different clinics be obtained." In 640 of these 1040 cases radical mastectomy was done with 231 five year survivals or 36.1 percent. If these survivals are based on the total number of patients seen the percentage is 22.2.

In 1943 Adair (1) reported the statistics from the Breast Department of Memorial Hospital (New York, N. Y.). Over a twenty-two year period there were 7,419 malignant tumors seen in that Hospital. Of these only 3535 were considered to be operable or 47.6 percent. In those cases in which there was no axillary metastasis 76.8 percent survived five years and in those with axillary metastasis the five year survivals were 41.8 percent. These percentages are based on a total of 1383 patients that he calls "determinate" cases.

In 1938 White (25) reported the results of a series of cases treated at Roosevelt Hospital (New York, N. Y.) in 1927 and compared the results of those treated in 1937.

	1927	1937
Number operated and followed	157	191
Operative deaths	5	5
Alive and well	58	55
	(36.9%)	(28.8%)
Number without axillary metastases	55	70
Alive and well	39	41
	(70.9%)	(58.5%)
Number with axillary metastases	97	116
Alive and well	19	14
	(19.5%)	(12.0%)
Number with known site of recurrence	88	119
Local recurrence	32	46
	(36.3%)	(38.6%)
Cases not followed five years	56	29

He pointed out that the percentage results were a disappointment: those of 1937 were not as good as those of 1927. He had hoped to show improvement with the added routine use of deep roentgen therapy then in vogue. "Our only possible explanation may be that our pathologic diagnostic ability is better and that our cases are more carefully studied and followed up."

From this study it appears to us that delay on the part of the patient, delay on the part of the physician, and the likelihood of metastatic involvement of other tissues and organs are the elemental weaknesses of the cancer problem that might be expected to yield to a carefully planned attack. The delay on the part of the patient should be attacked by an educational program directed toward the laity and the delay on the part of the physician should be attacked by an educational program in the medical school and in the Medical Society. The question of the presence or absence of metastasis, at present, appears not to be able of accurate determination. But, bearing in mind that metastases are inevitable, a search for evidence of their occurrence may reveal them before their extent is too widespread. We have formed the opinion that in reporting survivals of patients treated for cancer the percentage should be based upon all patients seen whether operable or inoperable, whether early or late. But after all the main campaign should be directed toward the education of the patient so that he or she may appreciate the significance of the danger signals of cancer about which we have been talking ever since the organization of the American Society for the Control of Cancer, in 1913.

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MILITARY MEDICINE AND SURGERY

WAR DEPARTMENT FACT SHEET

The Mental Health of United States Soldiers

THE health of the American Army is excellent. Two previous Fact Sheets have shown that the general level of health is high, the death rate from disease and injury lower than it has ever been in the history of the Army, and the recovery rate of troops wounded in battle higher than in any previous war. In this over-all picture of Army health, the Medical Department recognizes the fact that mental health plays its part. In the Army, as in civilian life, individuals vary in emotional stability and susceptibility to nervous disorders. Mental and nervous disturbances, in the Army or in civilian life, come from the same causes, but in training for combat and in actual warfare these causes are magnified by many factors which ordinarily the civilian would never be called upon to face. Where mental and nervous disorders occur in training or in combat, the Medical Department seeks to treat and cure them in order to fit the soldier for continued service, or if this is not possible, to return him to civilian activities, which in most instances he is entirely qualified to pursue.

1. Nervous breakdowns are thought of as occurring only in weaklings or in people who are fundamentally unstable. This is not true. It is a fact that some people break down or give up sooner than others, but under the conditions of fear, deprivation, and fatigue of modern warfare, the best and strongest has his breaking point. *Important Facts:*

The soldier's fear—and most, if not all, men who go into battle are afraid—must be recognized as a perfectly normal reaction. However, the mark of a good soldier is fear control.

The average man saves his mental balance in war by the exercise of that faculty that has often saved his sanity in civilian life — adaptability, or the ability of the human being to adjust to new conditions of living.

What Are War Neuroses?

2. In order to understand the problem of psychoneuroses among soldiers in this war, it is necessary to know certain basic facts established by the Medical Department of the Army. There is an increasing need to grasp some of the details of this problem because it is one of the most challenging and one on which all should be fully informed.

War psychoneurotics are not insane.

Most cases of insanity *(psychotics)* or those suffering from mental disease are quickly identified at the induction center and weeded out.

Emotionally immature, unstable, and antisocial personalities *(constitutional psychopaths)* are rejected at the induction center in most cases, but since they are often hard to identify, some get into the Army.

Men with nervous and emotional disorders *(psychoneurotics)* which are obvious or severe are usually identified at the induction center and screened out, but many less apparent types of these get in. Psychoneurotics comprise all but a few of this war's "battle fatigue" cases, and include men with no previous history of mental or nervous disorders. A psychoneurotic is suffering from a temporary borderline condition, and the odds are heavily in a soldier's favor that he will recover mental health. Quick cures can be accomplished at the front right after battle experience in 40 to 60 per cent of the occurrences.

The nervously ill soldier returned to this country from the battle front is not permanently injured.

In the main, additional hospitalization and treatment can rehabilitate a man with a nervous breakdown sufficiently for resumption of normal life.

The causes of nervous breakdowns in both civilian and military life are basically the same, but more intense in military life.

The incidence of nervous breakdown in civilian life has always been considerably higher than is commonly recognized. Some of the common causes in any environment of breakdown are fear, fatigue, and lack of food. Other factors which enter into the military picture are: climate; a man's relationship with his fellow soldiers and his superiors; disciplinary measures; leaves and furloughs; promotions and responsibilities; letters from home; type of training; job classification; and, perhaps most important of all, the breaking up of families left behind.

Causes of Nervous Breakdown

3. The causes of nervous breakdowns in this war are many and complex and are different in certain respects from those in World War I. The character of this war is such that the Army has come to recognize that mental health of soldiers is fully as important as the physical.

This is true psychological warfare with its obvious effect on nervous balance:

Offensive warfare means soldiers fighting in the open with their only protection a foxhole, or a mound or rock.

They fight their way through steaming jungles, or battle insects and enemy, or make landings in the face of direct enemy fire.

They carry their food with them and frequently eat it, cold, out of cans.

They keep moving. The men must keep on fighting until they have won a campaign; only then can there be a letup or rest.

Training is more rapid and intense:

The training period for most soldiers involves a difficult adjustment from domestic to military life. Here, in addition, the soldier is confronted with simulated conditions of global, mechanized war which put him to the first real test of nervous stability, and careful observation and repeated trial have shown that the type of man who breaks in early training is a poor risk in combat.

Incidence of Nervous Disorders

4. Nervous and mental disorders among soldiers constitute a serious problem during the training period in this country and in the combat zone. However, the Medical Department of the Army is organized to classify and treat soldiers who break down either in this country or overseas.

To handle properly the complex factors of nervous illnesses among soldiers, the Army has set up a plan of organization which has been developed, tested, and altered to meet changing needs. Realizing that there is a shortage of trained psychiatrists, and that there is an increasing need for them in this country to aid in the screening out process and in the combat areas to aid in treating these casualties. the Army is working hard to meet all demands for personnel and to develop a preventive program.

5. *Plan of Organization:* Throughout the Army all the main hospitals have trained psychiatrists on duty to take care of the patients who have nervous or emotional disorders. Early in the war the Office of the Surgeon General established a separate division of neuropsychiatry.

Neuropsychiatric consultants selected from among unusually well qualified specialists in civilian life have been assigned to the staffs of Service Commands and foreign theaters of operations.

There is a limited number of trained specialists available from some 3,000 officially listed; however, neuropsychiatrists have been placed strategically at tactical units, replacement training centers, and induction centers for the purpose of screening out misfits, and the prevention and early treatment of nervous and emotional disorders.

The Surgeon General's Office and the Morale Services Division of the Army have established a liaison by means of a specially trained and selected neuropsychiatrist assigned to the Neuropsychiatry Division. The Morale Services have been concerned with explaining to soldiers the problems of Army discipline, leadership, and general welfare, and imparting information through orientation courses, in the way of stimulating the vigorous mental attitude necessary for victory.

A School of Military Neuropsychiatry has been established at a large special Army neuropsychiatric unit on Long Island, N. Y., to increase the training of

psychiatrists so that they will be better fitted for the transition from civilian to military service.

Nervous Breakdowns in Combat

6. Severe exhaustion or anxiety states occur in considerable numbers in soldiers in the combat zone and in the noncombat zone of the theatre of operations. The most rigid weeding out at training camps and induction centers cannot eliminate from the service all the men who will break down in combat, particularly when fatigued.

Kinds of Psychoneuroses: (The soldiers do not like to be known in the Army as psychoneurotics, so various popular names have been given to the different types of breakdown.)

Exhaustion and war fatigue—used interchangeably for nervous and mental disorders.

Operational fatigue and flying stress—known previously as pilot fatigue condition, may be a neurotic rather than a fatigue condition, although fatigue and distress help bring it on.

War nerves—describing any group of symptoms.

War weariness—abnormal indifference.

Transition neurosis and separation anxiety—sometimes used to describe the mental state of a recruit who finds it difficult to bridge the gap between civilian and military life.

Embarkation fever — the hysterical or panic reaction that sometimes sweeps over an individual in staging areas on the eve of departure.

Task Force fever—another name for the same reaction among men on the eve of battle.

Traumatic War Neuroses—Psychiatrists say that men with peacetime histories of neurosis who break as soldiers are not suffering from a true war neurosis. The other victims — the "normal" men, the formerly stable personalities — who crack under a strain or psychic shock (produced by combat conditions of extreme intensity) can be diagnosed as traumatic war neuroses.

Army slang for some of the above: Eight ball (man in camp with odd behavior); barrack wacky; bomb happy; glacier happy; zeroitis; convoy jitters, etc.

7. Most Army psychiatrists feel that severe breakdowns in soldiers during combat are caused chiefly by long periods of exhaustion, the noise and strain of battle, diseases, privations of various kinds, sense of guilt at killing, and so forth.

Explanation: A nervous breakdown is the physical expression of mental conflict. The soldier is torn between his desire to stay at his post and his natural instinct to stay alive. In the face of extreme exhaustion this conflict may produce an acute anxiety state or some other nervous condition.

Examples: The incidence of fatigue cases is supported in a report on mental casualties in North Africa, which stated: "These totals are made up from units which were in the line continuously for four months without relief. Thus, the exhaustion factor was exceptionally important, and these figures may not hold when troops in the battle line can look forward confidently to relief periods after a tour at the front."

Treatment of Combat Breakdowns

8. It has been found by Army doctors that the treatment of the acute combat "nerves," especially the frequent anxiety type, is best given in evacuation hospitals on the theory that early selection of cases and quick treatment near the front and the sound of battle prevents the soldier's symptoms from becoming "fixed" in anticipation of a rapid evacuation to the rear.

Note: In one theater of operations it was noted that the nervous battle reaction diminished with increased battle experience. Those who failed to react during the first exposure were considered more stable.

Treatment: Treatment consists of quickly giving sedatives, plenty of good food and an opportunity to "get off his chest" the particular experience of a soldier which knocked his nervous system out of gear. Recognition that these casualties are not malingerers needing punishment but sick men needing treatment is also an important factor in recovery and return to duty at the front.

Narcosynthesis: In the Tunisian campaign, Lt.-Col. Roy R. Grinker and Capt. John Spiegel of the Twelfth Air Force introduced narcosynthesis — the administration of sodium pentathol which induces a twilight sleep. The soldiers were encouraged to tell their terrifying experiences in this twilight state, and thus got relief from nervous tension.

Sedation: Major Frederick Hanson successfully gave sedatives by mouth within sound of the guns in Tunisia to those psychoneurotics he thought would respond to immediate treatment.

The two treatments above were given in addition to other frontline measures.

Figures: In one campaign less than 3 per cent of exhaustion or anxiety cases returned to general hospitals in the rear were returned to combat duty, while in the evacuation hospitals, closer to the front, more than 60 per cent were returned to duty after four days.

At least four weeks of subsequent combat showed that 89 per cent of these were performing successfully. This confirms the importance of all possible treatment for nervous breakdown at the evacuation hospital.

9. Those "battle fatigue" soldiers who cannot be restored to full duty within five days in evacuation hospitals and *all psychoses* (those with mental diseases) are returned to the general and station hospitals in the rear, or to hospitals in this country. In all these hospitals, therapy is directed toward the improvement of the soldier either for a return to duty or a rapid release from service. It has been observed by authorities, however, that the farther the soldier is removed from the front line for treatment, the harder it is to restore him to service.

Disposition: Those who are returned to this country and who respond to treatment are returned to full duty or to noncombat duty. Those who are not returned to duty are discharged from the Army either to return to their homes or to a Veterans' Administration hospital for continued treatment.

Note: The success of neuropsychiatry is measured by the number of soldiers kept in the Army—not by the number eliminated.

10. In the Army hospitals overseas and at home a reconditioning and rehabilitation program is in operation for the purpose of putting the soldier in the best possible condition upon his dismissal. (A separate Fact Sheet on "Reconditioning and Rehabilitation of Wounded Soldiers" is in preparation.)

Treament of mental cases:

Mental casualties are helped back to health by means of occupational activities like shopwork, gardening, farming, physical workouts, recreational and educational programs, vocational training, and by individual talks with a psychiatrist and group analysis.

Breakdowns in Training

11. The early period of training both at the Army replacement training center and in tactical units in this country has been found to constitute the first serious mental hurdle for the soldier. Commonly, after about three to four weeks of training, mental disorders, particularly nervous breakdown, reach the highest peak. At this time the pressure of training and adaptation shows its most striking effect on the soldier.

Explanation: The replacement center is the first place that the Army has the opportunity to really test and examine a soldier. The soldier is faced with the hazards and strains of simulated battle conditions and separation from family. The man who may not have shown any nervous symptoms on his face or in his manner previously may break at this period.

The training period has been extended to as long as from 17 to 24 weeks in some instances in order not to push new men too fast in unfamiliar surroundings. It is the work of the psychiatrists at the replacement training center to eliminate rapidly those suffering from mental disease or severe nervous conditions. These types hurt both themselves and the Army by remaining in service. Their difficulties are accentuated, they interfere with the functioning of the "normal" men, and they find group activity increasingly difficult.

Note: Often the decision of the psychiatrist to return a man to civilian life is most difficult. Many unfit men are eager to serve, but their nervous states disturb the other men in training.

It is also the work of the Army psychiatrists at the replacement training center to classify the men who are not definitely fitted for overseas combat into those who are capable in respect to mental health of limited service in this country and those who are capable of limited service overseas, and into those who should be returned to civilian life.

Outpatient clinics: Men who obviously do not fit mentally into the military training picture may be sent to neuropsychiatric outpatient clinics associated with post hospitals in the replacement training center.

The clinic tries to keep the soldier on full duty status while receiving treatments for this disorder. Only mild or moderately severe cases of maladjustment are treated in this manner. If his illness becomes more severe, he is admitted to the neuropsychiatric section of the hospital where a thorough personality study is made and more intensive treatment given.

Note: If, after treatment in the outpatient clinic and later in the hospital, the patient is found to be so mentally ill as to be incapacitated for service, he is discharged from the Army. Prior to discharge, the soldier is interviewed by the psychiatrist and Red Cross social worker who make an effort to prepare him emotionally, socially, and vocationally for his return to civil life. In some soldiers this is a critcal period because of the unsympathetic attitudes they feel friends and relatives will have because they failed to qualify as soldiers.

Consultation clinics: Men who do not adjust to military training in the replacement training center may be sent to the consultation clinic, sometimes also called the mental hygiene clinic. Here, with the aid of trained neuropsychiatrists, psychologists from the personnel service, and a trained psychiatric social worker furnished by the American Red Cross, individuals who are emotionally and intellectually inadequate are referred by medical officers, unit commanders, chaplains, provost marshals, and others for examination, treatment, or separation from the service.

Encouraging: With the aid of these consultation clinics it has been found that large numbers of those who otherwise might have required hospitalization have been salvaged for further service.

Pre-Induction Examination

12. The incidence of nervous breakdowns in this war has increased the importance of the Army psychiatric examinations in the induction centers and the further weeding out of poor mental risks. Most induction centers have a group of civilian psychiatrists and one Army psychiatrist who passes on those rejected.

Induction Examination: Great faith has been placed in the induction interview and the higher rejection rate of 6 to 8 per cent in the Army suggests more careful selection than was exercised during the last war.

Comparison: In spite of its rapid character and the shortage of trained personnel, the screening at induction is preventing larger numbers of susceptible individuals from entering the service than during the last war, when there were about two per hundred rejected for nervous and mental unfitness prior to induction.

Figures: The rejections for this cause include about one third of the rejections for all causes.

Important: Induction should be considered a process of selection of those fitted for military service and *not for* civilian occupations. A diagnosis of psychoneurosis does not signify mental illness as commonly conceived. It simply means that these individuals will not stand up under the rigors of military life. Therefore, rejection, if justified, should carry no stigma.

The psychiatric examination at induction consists of only a 3 to 15-minute interview at the end of the medical examination. There are many indications of mental disturbances which the psychiatrist is quick to recognize on observing and talking to a man.

Indications: During the induction procedure is a logical time for nervous cases to reveal symptoms as anxiety, uneasiness, and emotional instability. Some become hysterical, others mute, tremulous, or faint. There is often evidence of poor coordination in the man's way of standing, moving, or sitting; attitudes of defiance or diffidence, twitching, and so forth are exhibited. A few questions from the psychiatrist will often reveal a history of nervousness or mental breakdown.

Tests: Various tests are given if necessary to determine coordination between muscles and nerves; the eyes are examined for signs of organic nervous disease; the skin is tested for sensation reaction; the reflexes of abdomen, knee, and ankle are checked; the response to instructions is judged by the accompanying amount of clumsiness, tremors, perspiration, and blotching of skin. Alcoholics are identified sometimes by their failure to hold breath, by indications of the pupils and the skin, drug addicts by scars, and so forth.

Note: Certain facts on the Army "Work Sheet" of each soldier are often indicative of a poor mental background. Also, the findings of the medical examination, particularly regarding pulse rate and

—Concluded on page 148

CONTEMPORARY PROGRESS

PHYSICAL THERAPY

The Galvanic Bath

H. T. ZANKEL (*Medical Record*, 156: 667, Nov. 1943) describes an apparatus for the galvanic bath which can be employed in any bath tub. A special machine is employed with a selenium rectifier that produces "direct and variable pulsating currents;" there are two separate circuits with four outlets each, two positive and two negative; milliammeters are fused in the circuits so that an "overload" immediately breaks the circuits—an additional safety factor. A specially prepared tannin bark extract (tecasol) is added to the bath water (6 ounces for the average tub); the tannin bark is used because it allows "a fair proportion of the current to go through the patient at a tolerable voltage." The water of the bath is of a temperature of 98° to 104° F, rarely above 100° F. A large triple electrode, connected to the positive pole, is placed under the upper part of the patient's back; a smaller electrode, connected to the negative pole, under the feet; side electrodes are connected to the positive pole and a center electrode to the negative pole. A five minute treatment is given to toleration. Then the upper electrode is disconnected, a massage applicator replaces the center electrode and the foot electrode is connected to the positive pole; a general massage of the entire body is given with special "emphasis" on the individual parts under treatment for about ten minutes; then the first procedure is repeated with the polarity reversed for five minutes. The patient, when taken from the bath, is dried, covered and allowed to rest for half an hour. The effects of the galvanic bath are attributed to its "intensification" of the action of the hot water of the bath as well as to the effect of the current in stimulating muscles and nerves. It is indicated in the treatment of arthritis, neuritis, myositis and all other conditions benefited by heat, and also in "muscle-nerve weakness" and paralysis, and in fatigue. The author has devised "a galvanic shower," for which a positive electrode is placed under the feet, and a hand electrode, attached to the negative pole, is manipulated with gentle friction over the whole body when the water of the shower is turned on; the temperature of the water should be hot (104° F.) until just before the end of the treatment when it is turned to cool (90° F.) for a few seconds while continuing the massage. This "galvanic shower" is especially indicated as a treatment for fatigue in persons who require "an immediate pick-up," as in the armed forces.

COMMENT

At the moment, the galvanic current is enjoying a well merited renaissance after the furore attending treatment by the short wave, ultrashort wave and, presently, the ultra-ultrashort wave machines. Well-grounded specialists, like all well-grounded physicians of long experience, have watched the rise and recession of waves of enthusiasm for new discoveries but have held fast to the old, well-tried, proven remedies whether physical or medicinal and accepted the new when properly evaluated. Shortwave diathermy owed its success to its ease of administration, supposed *freedom from danger and the oft-expressed psychologic effect of being tuned in like a radio. The magic waves* do *something for the patient, mentally, we are told by those who are not overburdened by knowledge of the modalities of physical medicine and who have long ago forgotten their physics. The galvanic current needs study, especial care of application, the patient must be watched lest he get into mischief, the indications must be clear-cut, the contraindications are definite. One cannot lightly throw in a switch, time a treatment for a certain number of minutes and call it a day. It cannot be lightly dis-*

carded as of no value or of restricted value only, by those who have not used it extensively. A few burns which leave ineradicable scars will soon convince the tyro that he had better leave it to those with more time, patience and experience.

To the older physicians skilled in the use of the galvanic current, the 2 or 4 celled Schnee bath was well known. The present hydrogalvanic bath under discussion is a further development of this method. In the country of its origin, rumour has it that it was supposed to be used especially for wearied aviators, over fatigued and unnerved, and that it had a most salutary effect. Likewise, arthritics, "neuritics," the asthenics, were apparently helped. Many workers must try the new modalities in the light of old experience, again make careful studies of patient and remedy and compare notes, as is their wont, in the effort to further evaluate, scientifically, the results. The electrochemical effects are chiefly on that "organ with a thousand strings — the skin," quoted by Dr. John Kellogg, through which the neurovascular system is called into play as defined by the elder Dr. Baruch who did so much to further hydrotherapy. The stimulation of muscles and nerves, the fall of high blood pressure, the improved appetite, the feeling of well-being, the ability to move more easily stiff and painful joints in the buoyant water, the improvement in peripheral nerve lesions, myositis as lumbago, paresthesias, etc., call for further trial of this most excellent modality. As always, the clinician referring the case, who makes the diagnosis, watches the prognosis and decides the result, is the final arbiter as to its value.

M.C.L.McG.

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The Treatment of Fractures by Physical Therapy

P. R. STEWART (*Archives of Physical Therapy*, 25:27, Jan. 1944) recommends that, after proper reduction and immobilization of the fracture, physical therapy should be employed, beginning after forty-eight hours with the application of heat by a luminous, an infra-red light or a baker. This is done by removing one-half of the plaster cast, supporting the extremity on the other half. The application of heat for thirty minutes is followed by a light stroking massage which must be given by the surgeon himself as he alone knows "how this particular limb should be handled." During this early period the patient should be trained in muscle setting exercises and in active exercises for the non-immobilized muscles and joints of the fractured extremity and of the entire body. As soon as the splint can be temporarily removed "under manual protection," assisted active exercises are begun; the physician should prescribe just what treatment should be given. As soon as union is sufficiently firm a whirlpool bath at 100 to 110° F is given the entire extremity for thirty minutes followed by sedative massage and free active exercise using a powdered board or some other antigravity device. Active resistive exercises with weights, pulleys or a rowing machine should be begun as soon as possible. In prescribing these various exercises the physician should be guided, the author believes, by clinical rather than by roentgenological evidence of union.

COMMENT

The name of Lucas-Championniere comes immediately to mind when fractures are mentioned. His article in the* British Medical Journal, *Oct. 3, 1908, The Treatment of

Fracture by Mobilisation and Massage, should be required reading in all medical schools and hospitals. He advocated gentle relaxing massage before reduction, by this means lessening swelling and pain; he found frequently that reduction was possible without anesthesia. He observed that these two modalities, massage and motion, *and particularly* motion, *shortened pain and helped prevent deformities. He therefore counseled* early *use of these measures by the surgeon himself, as an extra precaution. Clay Ray Murray has quoted Lucas-Championniere and subscribed to his doctrine of early mobilisation with marked success and has been one of its chief advocates.*

Those of us entrusted with the treatment of fractures over the years have worked out methods to help patients and surgeons with the least loss of time 1) as to treatment and 2) to getting back to work this bewildered victim of circumstances who is "sore" at his or her plight and, depending on the make-up, reacts in a way to help or hinder early recovery. The intelligent workman, *whether labourer, white collar or executive, takes it in his stride, cooperates and is soon on the road back to his job. The person of asthenic or inferior constitution, male or female, especially if further complicated by inferior mentality, is a serious problem and weeks and months may be necessary to overcome fear and fatigue, build up resistance and restore ability to face the future's problems.*

When possible, whilst awaiting the arrival of the surgeon, gentle heat from the smallest generator is applied to the injured member, preferably no longer than 10 minutes to each *part, certainly no longer than 20 minutes, followed by "effleurage" or the gentlest of stroking away from the fracture,* never over it, *to further the carrying away of the surplus blood from the engorged soft tissue. This reduces pain and swelling and patients frequently fall asleep. There is less need for large doses of opiates, reduction is not delayed so long and exercise can be started earlier. Active exercise of every part of the body except the site of fracture is encouraged within 24 hours. This consists of maintaining proper body posture, moving well parts about the bed, lifting himself when possible, helping himself to food, drinks, etc., taking care of his toilet, etc. The radio is a great help to awaken interest, to start a conversation with his likewise fractured neighbours, to continue keeping the score in games, etc. He can't be too sorry for himself if alert and curious. Formal treatment is begun with respiratory and graded general exercise of uninjured parts. Locally, distal parts, as fingers, hands, toes, feet and adjacent joints are* actively *moved: the patient will not hurt himself and can be trusted safely to exercise these. If gentle heat can be applied over or above the part as in extension, or above or below the site of injury when in a cast, this will help greatly. "Muscle setting"—contracting and relaxing the muscles of the injured part within the cast, will keep up tone and prevent stasis of circulation with possible organisation and so prevent deformity.*

When union is established, hydromassage with the warm whirlpool bath for the whole extremity, from 10-15-20 minutes, 100-105° is the measure of greatest utility. Herein are combined warmth and buoyancy of the water with a massage from the swirling, eddying bubbles that induce a neurovascular response acquired in no other way. The rosy glow of the skin, the increase in circumference of the limb, the aliveness of the member, have an effect upon the patient second only to the glow he feels when permitted to get into a full bath and move around in it himself—his own master. He cannot keep still in the bath, particularly with the whirlpool, so we have also active under *water exercises that are even more potent than those done in the air. The same is true of the hydrogalvanic bath whether the ordinary or the teca previously described. He wants to get up, to walk, to do things, to get out, to go home, to go back to work, days and days sooner than under the old immobilisation regimen. And he can if a Colles's only is at issue—but beware of the stiff, painful elbow or shoulder following this fracture, due to fear of moving, shrugging, lifting. If this should have occurred, more strenuous and pain-inducing gymnastics must be tried, as active resistive exercises with weights, pulleys, etc., if these have not been used in suspension or the ladder rungs for pulling up, stretching and lifting. If these be necessary there has been a slip-up. Graded weight bearing, as soon as permissible by the surgeon, in lower extremity fractures, does most for the patient, hence early active resistive exercises are here most important to help strengthen muscles, and, if any appliance will help to further weight bearing, so much the better. Where union is delayed, diathermy long or short wave,* longitudinally *applied, through the whole limb, will be of service, sufficient to give gentle warmth* only, not heat. *Never must it be applied over the site of the fracture lest decalcification be further induced.*

The weak, worn-out, neurasthenic individual, especially the female, needs general upbuilding, particular attention to feeding, sleeping, resting and progressive relaxation, and much heartening to induce healing. These patients can slump and die all too readily unless the right psychology be used and their confidence gained. There can be no undue hastening, no pushing too rapidly, no taking too much for granted. A cheerful atmosphere, a cheery manner, music, occu-

pational therapy, new interests, help more than strict gymnastics. Knitting, sewing, making "creations" to wear in the fortunate future will do more than formal exercise. The sooner they gain strength and courage to face the future the sooner they can take hold at home.

M.C.L.McG.

Refrigeration Anesthesia of the Extremities

S. THOMAS GLASSER and W. L. MERSHEIMER *(American Journal of Surgery,* 62:235, Nov. 1943) report the use of refrigeration anesthesia for amputations and for incision and drainage or excision of local lesions of the extremities. A rubber sheet and a blanket are placed under the extremity and the extremity completely surrounded by a layer of ice 3 inches in depth; the ice used is cracked "to the size of walnuts." The extremity thus "encased in ice" is then surrounded by the rubber sheet and blanket. If amputation is to be done a tourniquet (narrow gum rubber) is applied three inches above the site of amputation; the authors have not found it necessary to apply ice to the extremity before using the tourniquet. If only incision and drainage or local excision is to be done, the tourniquet is not necessary. The ice is not removed until the patient is on the operating table and the surgical team prepared. The minimum time necessary for refrigeration for operation on the thigh is two hours; for operation on the leg one and one-half hours; and for operation on the lower part of the leg, ankles and toes, one hour.

F. M. Massie (*Southern Medical Journal,* 37:1, Jan. 1944) employs refrigeration anesthesia for amputations; he formerly used a wooden box in which the extremity was placed in the cracked ice, with a spigot for draining off the water; but the lower edge of the hole through which the extremity was passed often caused discomfort, and the author has adopted the method of using a rubber sheet covered with a thick layer of finely cracked ice. The extremity is placed on this "ice bed" and ice packed all around it, the whole being covered with rubber sheeting and blankets. The extremity is kept in ice for two hours before applying the tourniquet; and for two hours subsequently if amputation is below the knee and for three hours for amputation above the knee. This method of anesthesia has greatly reduced the morbidity and mortality of amputation in severely ill and debilitated patients, wherever it has been used.

COMMENT

This is a further addition to the growing literature on the use of refrigeration anesthesia. Only by trial and result, in large series of cases, will the indications and contraindications, advantages and disadvantages be finally evaluated. Where ice is not available, as on battlefields in warm climates, the refrigerating machine described earlier in this series in MEDICAL TIMES *can be used to equal advantage. It takes up little room, is always available and refrigerates quickly and comfortably.*

M.C.L.McG.

PUBLIC HEALTH, INDUSTRIAL MEDICINE AND SOCIAL HYGIENE

Salmonella Infections in Man

E. SELIGMAN and his associates at the New York Salmonella Center *(American Journal of Hygiene,* 38:226, Nov. 1943) report a study of the salmonella organisms from 1000 cases of human salmonella infection during four years (spring 1939 to spring 1943). Thirty-eight different types of salmonella organisms were found; the most common type was *S. typhimurium.* While some of the cases studied occurred sporadically, there were several "explosive outbreaks," one of them affecting more than 200 persons. This was caused by a food infection with *S. typhimurium.* The majority of the salmonella types were found in the different areas from which cultures were sent in for study; usually even the rarer forms were not confined to definite areas, although there were occasional exceptions to this rule. About 10 per cent of all stool cultures came from healthy carriers, many of them food handlers. The most frequent clinical symptoms of salmonella infection were those of gastro-enteritis which varied in severity from mild diar-

rhea to "the severest forms with cholera-like prostration;" some cases showed localized infections and some septicemia; septicemia was most frequently observed in *S. cholerasuis* infections. There were 59 fatal cases in the series studied. These studies indicate that the control of salmonella infections is an important public health problem. Reportability is at present limited to cases of typhoid and paratyphoid fever and to groups of cases of food poisoning, but single cases of "presumed" food poisoning and a number of other salmonella infections "evade official recognition." The authors advise particularly "bacteriological supervision" of all persons handling food for public consumption.

COMMENT

This is further proof that Salmonella is a frequent cause of large numbers of cases which are included in the general category of "gastro-intestinal upsets", and shows the importance of the bacteriological examination of stool specimens from all such cases. If laboratory examinations were routinely done on all food handlers it is probable that large numbers of carriers of various types of intestinal organisms would be found. In view of the mortality rate and the frequent severity of the cases the desirability of including Salmonella infections in the list of notifiable diseases is obvious.

E.G.B.

Yellow Fever and Typhus and the Possibility of Their Introduction Into the United States

W. A. SAWYER (*American Journal of Public Health*, 34:7, Jan. 1944) discusses the possible danger of the introduction and spread of yellow fever and typhus in the United States under war conditions. He is of the opinion that there is little danger of these diseases or their insect vectors being brought back by troops returning from areas where these diseases are endemic, with the present methods of military hygiene. The most serious risk of introducing yellow fever is by air travel; this is being largely overcome by quarantine precautions at the borders of the United States, including disinsectization of aircraft and immunization of airplane crews and travelers. But a responsibility still rests upon local health authorities to exterminate the vector of yellow fever—*Aedes aegypti*—wherever it is present in the United States. Efficient mosquito control will render all communities "non-infectible" by yellow fever, even if the disease should be introduced at any time. With typhus, the insect vector is the body louse. Scattered outbreaks of typhus have occurred in the United States where living conditions were insanitary, as in certain labor camps, where the disease was introduced by laborers from Mexico, where typhus is endemic and sometimes occurs in epidemic form. In wartime when there is "much movement of people," owing to labor shortages in certain districts, and overcrowding in industrial areas, there is a danger of the spread of typhus, which must be overcome by adequate methods of louse control. Powders have been prepared which are highly insecticidal and yet do not injure the human skin. Such powders have been used and proved effective in ridding certain communities of body lice, and thus preventing the spread of typhus. The application of such measures, wherever infestation by lice is prevalent, will render each community "non-infectible" by typhus.

COMMENT

There is no special effort being made to exterminate Aedes aegypti, *except in general measures of mosquito control. Emphasis, therefore, must be placed on measures by which the infection would be excluded from this country. The dusting technic for control of the body louse is hardly adaptable to public use in this country, although it is being successfully used among the armed forces and populations of combatant areas.*

E.G.B.

Creosote Burns

A. D. JONAS (*Journal of Industrial Hygiene*, 25:418, Nov. 1943) has found that men working on the construction of buildings for which creosoted wood is used often suffer from creosote burns, especially those workers who saw the wood into short blocks. Creosote burns also occurred in workers handling creosoted roofpaper. The burns were most severe in workmen with fair skin and light hair; Negroes were least susceptible. The most effective protection against creosote burns was found to be the application of "a generous coating" of plain vaseline to the face. Of the 450 cases of creosote burns treated, 70 per cent were mild; 15 per cent were complicated by conjunctivitis, but only 2.7 per cent developed corneal le-

sions. In treating creosote burns, the face must first be washed with soap and water to remove the fine sawdust. For subsequent treatment, the author found the application of Foille-solution most effective; this solution contains various calcium salts, benzocaine, sulfur and vegetable oil base. Butesin-picrate ointment was also effective but did not give such immediate relief, even temporarily increasing the burning sensation in some patients. Mild conjunctivitis was treated by washing the conjunctival sac with boric acid solution followed by the application of boric acid ointment; for more severe conjunctivitis and small abrasions of the cornea, a butyn-metaphen ophthalmic ointment was used and the eyes bandaged for at least three hours. Patients with more severe corneal lesions were referred to an ophthalmologist.

COMMENT

The industrial physician will recognize these cases without difficulty due to their immediate association with the particular work environment. This information, therefore, will be helpful to the general practitioner who may occasionally encounter an isolated case and be unable to determine its cause.

E.G.B.

A Method of Transmitting Gonococcus Culture Specimens Through the Mail

D. RUSSELL and R. STEIN (*American Journal of Syphilis*, 27:703, Nov. 1943) have devised a method of transmitting gonococcus cultures through the mail, since the superiority of cultures over the examination of smears for the detection of gonococci is generally recognized. Slants were prepared from horse-plasma hemoglobin agar in which material obtained from the patient was streaked; these slants were incubated at 37.5° C before being mailed to the laboratory. Comparison of results was made with the smear examinations at the clinic and with cultures made by the usual method within three hours after the specimen was obtained. In 216 cases in which the control cultures were positive, the slant cultures were positive in 156 cases, and smears were positive in 71 cases; therefore, the number of false negative reports with the slant-borne culture technique as a routine laboratory procedure would have been much reduced as compared with the smear technique. It was found also that as the study progressed, the number of false negatives with the slant-borne culture method was reduced, indicating that with continued practice the efficiency of this method would be increased. Further studies of this method are being made at the New Jersey State Department of Health Bureau of Venereal Disease Control by means of state-wide experimental study, with a view to adopting the method not only for clinic use but also to provide private physicians with "a gonococcus culture service."

COMMENT

Physicians as well as public health officials will follow with interest additional reports on this study since a suitable culture medium is necessary for the diagnosis and control of gonorrhea.

E.G.B.

OPHTHALMOLOGY

Diagnosis of Glaucoma

A. G. THENS (*Minnesota Medicine*, 27:21, Jan. 1944) presents statistics showing that glaucoma is the chief cause of blindness in the adult in the United States; and that this is chiefly because patients with glaucoma often do not come to the ophthalmologist for treatment before vision has been irretrievably damaged. The general practitioner may aid in early diagnosis of glaucoma if its early signs are recognized in "the general physical checkup," in examining persons for jobs for industry or applicants for insurance. Pain is not an early symptom of primary glaucoma, although there may be a sense of fullness in the eye especially after a heavy meal, after taking stimulants, or after viewing a movie. A slight blurring of the vision is a common symptom, and many persons with glaucoma have their glasses adjusted repeatedly by an optometrist seeking to correct this. Increased intraocular tension is the characteristic feature of glaucoma, and the size of the pupuil is "a fairly good index" of the height of the tension, a wide pupil indicating high tension. The use of any drug that dilates the pupil, as belladonna or atropine, tends to increase the tension and may precipitate an attack of conges-

tive glaucoma. Such drugs should not be used, therefore, in any case in which there is "the least suspicion" of glaucoma. While ophthalmologists use the tonometer for measuring intra-ocular tension, a fairly accurate estimate may be made by palpation, if this method is used repeatedly. An elongation of the normal blind spot is an important early sign of glaucoma; the defect is observed first in the nasal half of the field; the visual fields for colors, especially for blue, contract before the visual fields for form. The internist and the general practitioner can determine these visual field defects by the use of some form of tangent screen for charting the visual fields; this does not require any special training and may easily be made a part of the general physical examination. The author suggests also that general practitioners may use the ophthalmoscope for the examination of the ocular fundi, and that they should not send their patients who need glasses to an optometrist for refraction but to an opthalmologist for a thorough examination.

COMMENT

The importance of examination of the adult's eyes by one competent to detect early signs of glaucoma and other diseases of the eye cannot be too strongly emphasized. This has been the main reason advanced by physicians, when optometric legislation is proposed giving this group added income, for limiting their functions. Gradually they have increased their field without consideration for the patient's interest. They use the title, doctor, without the qualifying "of optometry", to impress the patient with their ability to recognize eye pathology. This is contrary to the regulations of the Department of Education but the practice continues. While it may be true that the difference between a veterinary and a physician is merely a matter of clientele, the ethics of both require that the welfare of the "patient" shall be paramount to the financial consideration involved, if any. A physician is required by training and tradition to care for the patient whether paid for it or not, or to see that he is cared for; the optometrist is concerned only with "pay cases". He cannot then claim the "professional status" nor allow the patient to infer that he is a physician. The oldtime "corn doctor" was always called "doctor" but the title was free from serious implication just as is the title of "colonel" in Kentucky.

Optometrists of late have become most aggressive and claim the same relation to the oculist that the dentist bears to the physician. The optometrist claims an educational preparation of four years yet it is really but two years, the first two years of the course being preparatory like the pre-medical course. As far as his legitimate function is concerned, assuming an adequate preliminary education, three months should suffice to fit him for fitting and prescribing glasses up to the limit of their capacity. If the optometrist's training bore the same relation to dentistry that dentistry bears to medicine, there would be quite a different status and a complete readjustment of optometry would follow. The difference between the wholesale and the retail price of glasses is the reason we have optometry and explains why the optometrists have tried to control the fitting of glasses to the patient and the licensing of opticians.
R.I.L.

Oral Use of Prophylactic Sulfadiazine for Cataract Extractions

J. S. GUYTON and A. C. WOODS (*American Journal of Ophthalmology*, 26:1278, Dec. 1943) report the oral administration of sulfadiazine as a prophylactic measure in 312 cataract extractions. Two control series, 159 and 642 cases respectively, were studied in regard to the incidence of postoperative infection. In the sulfadiazine group, 3 gm. of the drug were given the night before operation and 1 gm. three times a day for seven days after operation unless a toxic reaction developed, or there were indications for continuing the drug for a longer period. Temperatures were taken every four hours day and night in patients receiving sulfadiazine; the drug was discontinued if the temperature rose above 100° F. without other obvious cause. Sulfadiazine was also stopped if a rash or nausea developed. Fluids were forced to 2500 cc. daily, fluid and urine charts were kept, and the urine examined for red blood cells every two days; the drug was discontinued if red blood cells were found. Blood sulfadiazine levels were determined on the second and fourth days; if the free sulfadiazine level was above 10 mg. per cent, the dosage was reduced. White cell counts were made on the second and fourth days and the drug discontinued if the count dropped below 4000. Discontinuance of the drug was necessary in 24 cases, the most frequent indication being fever above 100° F. (11 cases), fever with rash (3 cases) and nausea (7 cases). The incidence of postoperative reaction, including all "undue"

inflammation indicating actual or questionable infection, was 1.6 per cent in the sulfadiazine group, 7.5 per cent in the first control group and 9.7 per cent in the second control group. In each group, the incidence of reactions was higher in extracapsular than in intracapsular extractions. One of the infections in the sulfadiazine group, purulent endophthalmitis, developed seven days after sulfadiazine had been stopped, and cleared up promptly when sulfadiazine therapy was resumed, with 20/20 vision resulting. Although the work of postoperative care is considerably increased by the prophylactic administration of sulfadiazine, the "beneficial results" obtained are considered to outweigh the disadvantages of the procedure. Local application of sulfadiazine was tried in a small series of cataract operations, but was not effective, and appeared to irritate the eye.

COMMENT

This is a most important contribution. It is difficult to decide whether a remedy given in advance of an operation prevents infection but experience in a large hospital over an extended period should supply excellent reasons for preventive measures.

R.I.L.

Penicillin and Sulfadiazine in the Treatment of Experimental Intra-ocular Infections

LUDWIG VON SALLMANN (*Archives of Ophthalmology*, 31:54, Jan. 1944) has found that injections of *Staphylococcus aureus* into the anterior chamber of the rabbit's eye produces a purulent endophthalmitis of a constant type that serves as a standard lesion for chemotherapeutic experiments. It was found that the combined oral administration and topical application of sulfadiazine controlled the infection in 21.7 per cent of eyes thus infected, if the first treatment was given six to seven hours after inoculation. Penicillin applied topically within the same period definitely controlled the infection in 62.5 per cent of the eyes infected and temporarily controlled the infection in an additional 12.5 per cent; the author is of the opinion that results would have been good in 75 per cent if treatment had been continued for a longer period in the latter group. The results with penicillin in staphylococcal infection of the eye were, therefore, definitely better than with sulfadiazine. By intralenticular injection of *Cl. welchii*, a destructive endophthalmitis was produced; neither penicillin nor sulfadiazine was effective in controlling this infection, even if treatment was begun within six hours.

COMMENT

Oculists have not been able to get penicillin but reports like this will stimulate efforts to obtain the remedy for general use in eye hospitals so its possibilities may be exploited to the full. Meanwhile, there is no complaint that the armed forces shall be served first and served well. Government control irks the profession even under these conditions.

R.I.L.

Carbaminoylcholine Chloride in Petrolatum

K. C. SWAN (*Archives of Ophthalmology*, 30:591, Nov. 1943) found in experiments on rabbits' eyes that carbaminoylcholine chloride penetrated the cornea most readily when applied as a suspension in a pure petrolatum base. As carbaminoylcholine chloride is employed as "a long-acting substitute for acetylcholine," an ointment containing this drug (1.5 per cent) in a petrolatum base was used for local application in the treatment of chronic glaucoma in 15 eyes (9 patients) and was effective in controlling the tension in 13 of these eyes when applied twice daily. Most of the patients found it easier to apply the ointment than a solution.

COMMENT

Very excellent results are reported nowadays from the use of cholines in subacute and acute glaucoma. Some of these have been treated without avail with eserine and pilocarpine. The results in glaucoma simplex are not so satisfactory nor have we good reason to expect any drug to overcome the tissue changes of established glaucoma.

R.I.T.

MILITARY MEDICINE AND SURGERY

—Concluded from page 140

blood pressure, are valuable to the psychiatrists, since vasomotor instability is often associated with mental disorders. Such a condition acts as a signpost for further investigation on the part of the psychiatrist.

Medical BOOK NEWS

Edited by

ALFRED E. SHIPLEY, M.D., Dr. P.H.

All books for review and communications concerning Book News should be addressed to the Editor of this department, 1313 Bedford Avenue, Brooklyn, N. Y.

Hermann von Helmholtz
1821-1894

Classical Quotations

● As a result of my medical studies I was well acquainted with the difficulties confronting ophthalmologists in those conditions which at that time were lumped together under the term amaurosis. I immediately set about to construct the instrument out of spectacle lenses and cover glasses for microscopic preparations. At first it was still quite difficult to use, and without a firm theoretical conviction that it must work, I would perhaps not have persevered in my efforts. But after about eight days I had the great pleasure of being the first to see clearly a living human **retina.**

HERMANN VON HELMHOLTZ

Erinnerungen in Vortrage und Reden, vol. I, Braunschweig, 1896.

A Medical Novel on Army Life

Air Surgeon. By Frank G. Slaughter. Doubleday, Doran and Company, Inc., Garden City, N. Y., [c. 1943]. 306 pages, 8vo. Cloth, $2.50.

DR. SLAUGHTER is the author of *That None Should Die* and *Spenser Brade, M.D.* This book is a novel of an army training camp with a Flying Field. The hero is the major in charge of surgery at the Base Hospital, with leading secondary characters, the doctor's flying brother and the latter's recent bride. In the course of the story, the doctor does some fine neuro-surgery (described in minute detail—how come no reference to the new electric searcher) ending up with an operation on his brother for a compound comminuted fracture of the skull, unfortunately not completely successful because of involvement of the optic centers.

To round out the story of camp life, there is, of course, a rather frank consideration of the sex attractions of neighboring Boomtown, an expose of sabotage of the planes, and the secret love of the surgeon for his brother's wife. How this turns out, with honor and credit to all concerned is told in the finale, with its glorious burst of flying sacrifice.

JOSEPH RAPHAEL

Traumatic Rehabilitation

Rehabilitation of the War Injured. Edited by William B. Doherty, M.D., and Dagobert D. Runes. New York, Philosophical Library, [c. 1943]. 684 pages, illustrated. 8vo. Cloth, $10.00.

A COLLECTION of papers of recent literature on traumatic injuries by eminent authorities. The field covered is from the skull to the feet. Little more need be said in a review. It is a most valuable summing up and compilation of war injuries and their care and is most timely.

JA. C. RUSHMORE

A Study of Pain

Pain. [Res. Publ. Ass. Nerv. Ment. Dis., Vol. 23.] Ed. Bd., Harold G. Wolff, M.D., Chairman. Baltimore, The Williams and Wilkins Company, [c. 1943]. 468 pages, illustrated. 8vo. Cloth, $7.50.

THERE is surely no more complete study of pain in all its aspects, theoretical and clinical, than this symposium of thirty-two papers constituting the proceedings of a meeting of the Association for Research in Nervous and Mental Disease. Much of the material presented has been published before; some of it has been published before; some of it has never appeared in print; all of it constitutes a wealth of information about pain brought together intelligently and comprehensively within the confines of one volume.

Many papers are devoted to the theoretical and experimental aspects of pain production, perception, and measurement.

Every clinician will find specific papers to interest him. There are three chapters devoted to heart pain; three to pain in the gastro-intestinal tract; four to headache, etc. Each essay is followed by stimulating discussion. The collection is enthusiastically called to the attention of all practicing physicians.

MILTON PLOTZ

The Endocrines in Wartime

War Endocrinology. By James H. Hutton, M.D. Chicago, The Wayside Press, [c. 1943]. 363 pages. 8vo.

THIS is a well written, practical, fairly scientific book. It is designed to give the general practitioner a working knowledge of endocrinology. Hutton advocates several types of therapy and accepts empiric results as evidence of his accomplisnments. He continues his advocacy of low dosage irradiation of the pituitary, adrenals or ovaries for diabetes, hypertension and menstrual disturbances. The inclusion of a bibliography and pictures culled from his vast clinical experience would have added to the usefulness of this book.

BERNARD SELIGMAN

Anatomy for the Surgeon

A synopsis of Surgical Anatomy. By Alexander Lee McGregor, M.Ch. 5th Edition. Baltimore, The Williams and Wilkins Company, [c. 1943]. 710 pages, illustrated. 12mo. Cloth, $6.50.

THE author does not present this work as an exhaustive text in anatomy. Moreover it is not meant to be a "short-cut" compend such as students might be tempted to use in "boning up" for important examinations. The purpose is to correlate the essentials of anatomy with the practice of clinical medicine and surgery. Matters of purely technical and academic significance consequently are passed over for such facts as are most valuable in clinical study and practice. This, the fifth edition, is replete with clarifying and descriptive sketches and illustrations. Unlike texts that deal so largely with anatomy per se, the work includes various clinical syndromes that are clarified in the light of the anatomical structures which are involved.

The section on the anatomy and surgery of the sympathetic has been revised. A timely section is that dealing with the structures concerned in the etiology and sequelae of retropulsion of the intervertebral disc (nucleus pulposus). Especially good are the following chapters: XXXII—The Anatomy of Congenital Errors; XLII — The Anatomical Bases for Clinical Tests, and XLIII — The Anatomy Governing the Surgery of the Lymphatics.

The text is divided into (1) "Anatomy of the Normal" consisting of some three hundred pages of technical information with appropriate illustrations, and (2) "The Anatomy of the Abnormal" which is equally extensive and fully illustrated.

The book should prove generally helpful and instructive to prospective surgeons.

ARTHUR GOETSCH

Histopathology

Pathological Histology. By Robertson F. Oglivic, M.D. 2nd Edition. Baltimore, The Williams and Wilkins Company, [c. 1943]. 411 pages, illustrated with 235 photomicrographs in color. 8vo. Cloth, $9.00.

IN THIS new edition two chapters covering eighty-eight pages are devoted to neoplastic diseases. The tumors are described according to the following classification: (1) simple tumors or benign which occur normally in the adult body, (2) malignant tumors which show considerable departure from the normal adult type of tissue and which consist essentially of masses of irregularly arranged cells and (3) mixed tumors made up of a variety of tissues.

A comprehensive summary of the hematopoietic system is condensed into thirty-three pages.

Unfortunately the review on endocrine pathology is limited in its scope.

Although the descriptive material in general is concise, Dr. Ogilvie has managed to include macroscopic appearance of the diseased tissues and organs as well as the microscopic.

Next to actually seeing the specimens and microscopic sections, this book offers the most vivid interpretation of the diseased structures.

HENRY M. FEINBLATT

The Naval Medical Corps

Doctors Aweigh. The Story of the United States Navy Medical Corps in Action. By Rear Admiral Charles M. Oman, M.C., U.S.N. Garden City, N. Y., Doubleday, Doran and Company, Inc., [c. 1943]. 231 pages, illustrated. 8vo. Cloth, $2.50.

THIS is the story of the navy medical corps, dramatized by lively accounts of medical problems in the service. The story opens with the stirring scenes at Pearl Harbor and how the navy medical personnel met the emergency demands made on it. It might seem that any fur-

ther descriptions might be in the nature of an anti-climax, as far as the reader is concerned. Dr. Oman is equal, however, to the necessity for continued suspense and interest. He draws on his long and varied experience for much that will instruct and entertain as illustrative of the life of the navy doctor and the medical corps ashore, asea, and in foreign lands. The friendly personality of Dr. Oman is an element in the readability of the book.

JOSEPH RAPHAEL

Psychosomatic Medicine

Psychosomatic Diagnosis. By Flanders Dunbar, M.D., Med. Sc.D. New York, Paul B. Hoeber, Inc., [c. 1943]. 741 pages. 8vo. Cloth, $7.50.

AS Colonel Leonard G. Rowntree mentions in his foreword to this book Dr. Dunbar presents the results of twelve years of research and clinical investigation in this field. Her work has been carried on in the psychiatric and mental divisions of Columbia University, Presbyterian Hospital Medical Center.

The particular procedure recommended for obtaining a psychosomatic history as well as the special technique for examination, analysis of the data and diagnosis is fully covered. There is an interesting discussion of the psychiatric aspect of such varied conditions as cardiovascular diseases, fractures, rheumatic disease and diabetes.

Although the author modestly refers to the volume as "a trip through the laboratory and a textbook in embryo" the material is presented in studious and informative detail.

LAURENT FEINIER

Hearing Tests

Clinical Auditometry. By C. C. Bunch, Ph.D. St. Louis, C. V. Mosby Co., [c. 1943]. 186 pages, illustrated. 8vo. Cloth, $4.00.

THIS volume meets a long-felt need for the approved and standardized methods for hearing tests. The author includes a chapter on the development of the audiometer which is most interesting and at the same time valuable from the historical point of view. Dr. Bunch has condensed a lifetime experience with the deaf and the hard of hearing into really a very small volume. Many otologists have felt their own inadequacies in conducting hearing tests but, with this book as a guide, the otologist can proceed with every confidence. The author discusses not only the technique of audiometric testing but also the time-honored tuning forks. There are other interesting and informative chapters including the sound-proof room and the associated problems in selecting a hearing aid. In writing "Clinical Audiometry" Dr. Bunch gives the otologists a guide to a very intriguing subject. We feel that this book is indeed a worthwhile monument to the memory of a man who gave so much to so many.

SAMUEL ZWERLING

Stammering

Stuttering. Significant Theories and Therapies. By Eugene F. Hahn. Stanford University, Stanford University Press, [c. 1943]. 177 pages. 8vo. Cloth, $2.00.

THE author has selected 25 persons, leaders in the field of speech disorders, and obtained their views as to the causes of stuttering and its treatment. The result is a compendium of 25 short chapters divided into "Theory" and "Therapy." Each chapter is under the heading of a name of a person who either gave his own digest or approved and edited the one written by the author of the book.

The author refrains from giving his own interpretation and presents the views of the contributors in a clear and concise manner. He leaves it to the reader to form his own conclusions.

At the end of the book there is an appendix where the author outlines his own procedures in a clinic for stutterers.

It is a valuable book as it gives in a short resume the present day theories on stuttering. The book should be of help not only to the speech student but to everyone who is interested in speech disorders.

I. W. KARLIN

Introduction to Psychiatry

Psychological Medicine. A Short Introduction to Psychiatry. With an Appendix WAR-TIME PSYCHIATRY. By Desmond Curran, M.B. and Eric Guttmann, M.D. Baltimore, The Williams and Wilkins Company, [c. 1943]. 188 pages, illustrated. 8vo. Cloth, $3.50.

THE authors have rendered a signal service in giving the practitioner a most readable and practical formulation of the chief topics which concern psychiatry in peace and war. One admires the well-chosen and economizing use of words which clarify description and interpretation of typical psychogenic and organogenic reaction types. Rare conditions are eliminated since the authors are primarily concerned in making the field of psy-

chiatry so attractive that every practitioner, whether in Army or civilian life, will be made more intelligently familiar with the more practical aspects of psychiatry.

This compact volume is enhanced by the use of a number of photographs and illustrations.

No medical student or physician should be without this outstanding handy volume.

FREDERICK L. PATRY

For the Student of Anatomy

An Atlas of Anatomy. By J. C. Boileau Grant, Vol. 1, Upper Limb, Abdomen, Perineum, Pelvis and Lower Limb. Baltimore, The Williams & Wilkins Co., [c. 1943]. 214 pages, illustrated. 4to. Cloth, $5.00.

THIS atlas is essentially for the student of anatomy and is especially recommended to be used along with "A Method of Anatomy" by the same author.

The drawings were made from photographs that were enlarged and traced on tracing paper, and then were transposed by the artist. This, of course, makes for accuracy. The upper limb, the abdomen, the perineum and pelvis, and the lower limb are exceptionally well illustrated, the legends are in bold type; the muscle attachments, arteries, veins and nerves, are in color. The circulation of the intra-abdominal viscera is exceptionally well done, and these drawings alone would make the volume most beneficial to the abdominal surgeon.

It is to be hoped that Professor Grant will soon give the profession Volume 2 of this atlas, because the accurate understanding of anatomy of the entire body is most essential not only to the beginner, but also to the practicing and postgraduate student.

HERBERT T. WIKLE

Gradwohl's New Edition

Clinical Laboratory Methods and Diagnosis. A Textbook on Laboratory Procedures with Their Interpretation. By R. B. H. Gradwohl, M.D. 3rd Edition. Vols. I and II. St. Louis, C. V. Mosby Co., [c. 1943]. 2130 pages with index of 100 pages; 726 text illustrations and 57 color plates. 4to. Cloth, $20.00.

THE old text has been so extensively revised, improved, and enlarged, as to require two separate volumes with a total of 2,130 pages. The many additions of new material have so enriched the book and have so brought it up to date, that no laboratory library can now be considered complete without this work. The 721 illustrations and the 57 excellent colored plates leave very little to the imagination of the reader wherever the subject becomes difficult of verbal description. It is here that the real value of the excellent illustrations with which this text is replete, is most fully appreciated by the reader. The new, as well as improved subject matter which deserve special mention are isoimmunization, including the Rh factor; the analysis of blood cultures; the recent advance in the examination of estrogenic substances; vitamin assay and index; the newer hematologic methods; the latest information on liver and kidney function tests; and last but not least the timely discussion on tropical diseases. Although in some portions of the text, the reader gets the impression that the description of the various methods is somewhat thrown together, the main bulk of the material is coherently arranged and well treated.

S. H. POLAYES

BOOKS RECEIVED

for review are promptly acknowledged in this column; we assume no other obligation in return for the courtesy of those sending us the same. In most cases, review notes will be promptly published shortly after acknowledgment of receipt has been made in this column.

An Atlas of Anatomy. In Two Volumes. By J. C. Boileau Grant, M.B. ***Volume II. Vertebrae and Vertebral Column, Thorax, Head and Neck.*** Baltimore, The Williams and Wilkins Company, [c. 1943]. 390 pages, illustrated. 4to. Cloth, $5.00.

Traumatic Injuries of Facial Bones: An Atlas of Treatment. By John B. Erich, D.D.S., M.D. and Louie T. Austin, D.D.S. In collaboration with Bureau of Medicine and Surgery, U. S. Navy. Philadelphia, W. B. Saunders Company, [c. 1944]. 600 pages, illustrated. 8vo. Cloth, $6.00.

Minor Surgery. By Frederick Christopher, M.D. 5th Edition. Philadelphia, W. B. Saunders Company, [c. 1944]. 1006 pages, illustrated. 8vo. Cloth, $10.00.

Gastro-Enterology. By Henry L. Bockus, M. D. ***Volume II. The Small and Large Intestine and Peritoneum.*** Three volumes to be published. Philadelphia, W. B. Saunders Company, [c. 1944]. 975 pages, illustrated. 4to. Cloth. Price of set, $35.00.